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OUR
ECONOMIC SYSTEM

VOLUME I

BY
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OHIO STATE UNIVERSITY

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PREFACE

Knowledge of our economic life is important for two reasons: first, that we may understand the society of which we are a part, and second, that control may be exercised to the end that life may be improved. The purpose of this book is to extend such knowledge. This is accomplished, it is hoped, by a restatement of conclusions that have long been part of the literature of economics, and by some additions to the body of knowledge of the economic activity of men.

The treatment in this book is institutional. The economic system is regarded as very largely a complex of social conventions, or institutions, that have been devised by men for the governance of their economic life. While many of these institutions have a high degree of permanance yet they are all forever changing. Further, the mutual impingement of the economic and the other aspects of our social life upon each other are in constant flux. As a result of this point of view, considerable emphasis is laid upon the possibility of social control.

No attempt has been made to distinguish between economic principles and economic problems, or between principles of economics and applied economics. As is argued in Chapter I, such distinctions are held to be largely invalid. Every economic problem embodies economic principles and every economic principle is a statement of relationships that are part of some problem; and further, economic principles are not distilled out of one portion of economic behavior and then applied to another. The facts in one aspect of economic life may help to an understanding of some other aspect, but every phase of economic life calls for analysis — for a description of the relationships that are involved. Such analyses, or descriptions, should be similar in spirit and method regardless of the phase of economic life that is being considered, and in this book an attempt has been made to make them so.

The book has been written especially for use as a text in the introductory course in economics in colleges and universities. The needs of the student have been kept in mind rather than the interest of professional economists. In other words, an attempt has been made to make the treatment realistic and to keep it free from discussions of the history of doctrinal dogma. A few references have been made to currently accepted doctrines that are believed by the author to be inaccurate, but these references are designed to illustrate the points at issue. The aim has been to include only such material as will assist the reader in understanding the economic society of which he is a part.

Although the book is in two volumes, the treatment is largely in outline form. The details of modern economic life are so extensive that an exhaustive treatment of these phenomena in one book or by one author is impossible. Each of a dozen and more phases of our economic life is the specialty of a separate group of scholars and is portrayed in a voluminous literature. Only the outstanding features of these various aspects of economic life have been included here. The view that is given is as from an air-ship. The addition of details and further analysis is the task of specialists in these various fields.

For assistance in the preparation of this work I am especially indebted to the corps of young men and women who have taught with me in Economic 401–402 at Ohio State University during the past five years. Of this group Helen Cherington Farnsworth and J. J. Spengler have devoted a great deal of time to the project and have offered very valuable criticism. Others of this group to whom special thanks are due are: W. H. Belden, E. L. Bowers, C. B. Cheney, M. C. Cross, R. L. Dewey, E. F. Donaldson, G. D. Haskell, D. C. Horton, C. L. James, R. D. Patton, R. H. Richards, H. R. Rowntree, L. E. Smart, Louise Stitt, R. T. Stevens, and Virgil Willit. Professor H. F. Walradt has advised relative to the chapters on Public Finance.

I have completed the book and read the proof at the University of Porto Rico while holding a visiting professorship there during the second semester of the academic year 1927–1928; and am under deep obligations to the faculty and administration of the University for having generously facilitated this work.

Professor F. E. Croxton of Columbia University has been of great assistance in securing current data while the book has been in press and in advising in regard to the chapter on Business Cycles.

H. G. H.

Río Piedras, P.R.
April 15, 1928.

CONTENTS

VOLUME I

PART I. OUTLINES OF THE PRESENT ECONOMIC SYSTEM

CHAPTER PAGE

I. THE NATURE OF ECONOMICS 3

The Subject Matter of Economics — Economic Activity — The Term Economy — Economic Interests and the Pattern of Life — Economic Interdependence — Conflict of Economic Interests — Economics and Public Questions — The Social Aspects of Economic Activity — The Division of the Field of Economics — Production — Exchange — Distribution — Consumption — The Overlapping of These Problems — General Aspects of the Science of Economics — The Literature of Economics — Some Features of the Method in Economics — Long-time and Short-time Effects — Erroneous Conclusions in Economics — Economic Theory — Economics a Growing Science — Problems and Exercises — References.

II. THE ECONOMIC SYSTEM: ITS COÖPERATIVE ASPECT 21

The Coöperative and the Technical Aspects — Methods of Effecting Coöperation — Freedom in the Present System — State Socialism — Government Regulation — Regulation by Business Associations — Freedom — The Complexity of the Present System — Economic Advantage — Marginal Producers — Competition — Statistics of Employment in Different Fields — Voluntary Restrictions on Competition — Authority in the Present System — Restrictions by the Government — Variation in Degree of Government Restriction — Problems and Exercises — References.

CHAPTER PAGE

III. THE PRESENT ECONOMIC SYSTEM: ITS TECHNICAL ASPECT 42

Machinery — Agriculture and Other Pursuits — The Factory System — Large Scale Production — Transportation — Communication — Standardization — Localization of Industry — The Survival of the Small Firm — Electricity — Recent Developments in Technical Efficiency — Relation of the Technical to the Coöperative Aspect —Problems and Exercises — References.

IV. ECONOMIC HISTORY 55

Coöperative and Technical Developments—Feudalism — The Guild System — Mercantilism — The Decline of Mercantilism — Period of *Laissez Faire* — Legislative Control — Trade Associations — A Changing World — Problems and Exercises — References.

V. THE INSTITUTIONAL CHARACTER OF OUR ECONOMIC SYSTEM 70

Institutional Forms — "Human Nature" — The Economic System is Institutional — Non-acquisitiveness — Religion and Capitalism — Persons Who Are Non-acquisitive — Question as to the Desirability of Prevailing Attitudes — Pecuniary Values To-day — Man is Social — Problems and Exercises — References.

PART II. SOME FUNDAMENTAL ELEMENTS IN ECONOMIC LIFE

VI. LABOR 87

Labor Defined — Personal Qualities of Economic Significance — Physical Strength — Knowledge — Dependability — Ambition — Leadership — Pleasure and Irksomeness in Labor — Pleasure in Work — Length of the Working Day — Modern Methods and Irksomeness — Motives in Economic Activity — The "Economic Man" — Predatory Labor — Various Labor Groups — Problems and Exercises — References.

CHAPTER PAGE

VII. POPULATION AND NATURAL RESOURCES 105

Trade Relations and Resources — Numbers and Resources — Increasing Average Returns — Diminishing Average Returns — Decreasing Total Returns — Diminishing Returns in Business Establishments — Diminishing Returns and Landowners vs. Non-landowners — Land Rent and Diminishing Returns — Improvement in Methods — The Growth of Population — Problems and Exercises — References.

VIII. INDUSTRIAL EQUIPMENT 121

Indirect Goods — Roundabout Production — Wages and Machinery — Goods as Savings — Social and Individual Savings — Emphasis on Saving — Concentration of Wealth and Industrial Equipment — The Savings of Corporations — Savings Institutions — Oversaving — The Proportion of Economic Energy Used to Produce Industrial Equipment — Problems and Exercises — References.

IX. THE CAPITALIST AND THE ENTREPRENEUR 137

The Capitalist — The Function of the Capitalist — The Payment of the Capitalist — The Rate of Interest — The Entrepreneur — The Function of the Entrepreneur — The Payment of the Entrepreneur — Problems and Exercises — References.

X. SPECIALIZATION 149

Trade and Specialization — Kinds of Specialization — Transportation — Similarity of Culture — Large Scale Production — Cities and Specialization — Money and Exchange — Credit Exchange — When is Specialization Advisable? — Trade Compels Men to Specialize — International Trade — Dependance of Communities Upon a Specialty — Middlemen — The Middleman — Relation of the Interests of Specialists to the Interest of Society — Restriction of Output — The Introduction of Machinery — Long-run Tendencies — Inefficiency — Employment of the Rich — A Changing Society — The Balance of Interest — Money-making — Problems and Exercises — References.

CHAPTER PAGE

XI. Consumption 173

Definition — Consumption and the Direction of Production — Producer and Consumer — Government Control Over Consumption — Control Over Consumption During a War — Consumer's Knowledge — The Standards of Living — Are Human Wants Insatiable? — Restrictions on Increase in Standard of Living — Resistance to a Falling Standard of Living — Scale of Living and Free Income — Problems and Exercises — References.

PART III. THE ADMINISTRATION OF BUSINESS ENTERPRISE

XII. The Organization and Finance of Enterprise . 191

Forms of the Business Unit — Partnership — The Corporation — The Extent of Corporate Organization — Stockholders — Creditors — Limited Liability — Double Liability — The Control of a Corporation — Minority Control — Different Forms of Securities — Non-voting Common Stock — Ownership and Management — The Transference of Stock — Stock Exchanges — Investment Companies—Problems and Exercises—References.

XIII. The Organization and Finance of Enterprise (*Continued*) 208

The Financial Records — A Balance Sheet — Profits — Dividends — Stock Dividends — Are Stock Dividends Income? — Accuracy of Balance Sheets — Capitalization — Overcapitalization — Par and No-par Stock — Corporate Legislation — Taxation of Corporate Shares — State Legislation — Federal Incorporation — Corporate Combinations — Trusts — The Holding Company — Interlocking Directorates — Problems and Exercises — References.

XIV. The Location and Size of the Enterprise . . 227

The Location of Enterprise — The Accessibility of Raw Materials — Accessibility to Market — Labor Supply — Power — Financial Assistance — The Localization of Industry — The Size of Establishments — Large Scale Operation — Non-manufactur-

CHAPTER PAGE

ing Enterprises — The Combination of Enterprises — The Economies of Horizontal Combination — The Economies of Vertical Combination — Limitation upon the Size of Establishments — The Survival of the Small Firm — Problems and Exercises — References.

XV. THE PROPORTIONS OF ECONOMIC AGENTS IN AN ENTERPRISE 240

Diminishing Returns — Taylor's Table — The Average per *L* and per *N* — If *L*'s and *N*'s were Reversed — The Definition Again — Physical Returns and Cost per Unit — The Most Profitable Combination — Problems and Exercises — References.

XVI. PRODUCTION MANAGEMENT 255

Importance of the Business Manager — Ownership and Management — The Efficiency of Management — Scientific Management — Location and Size of Plant — The Expense of Enterprise — Cost Accounting — The Reduction of Overhead per Unit of Product — Overinvestment in Plant — Equipment — Work Control — Volume of Production — Standardization of Products — Labor Relations — Problems and Exercises — References.

XVII. RISKS IN ENTERPRISE 270

General Considerations — Business Risks — Knowledge and Risk — Some Men Delight in Risks — Classification According to Risk — Insurance, or the Pooling of Risks — The Insurance Principle — Self-insurance — The Extension of the Field of Insurance — Endowment Insurance — Hedging — Price Changes and Risk — "Spot" and "Future" Transactions — "Short" Sales Hedging — Removal of Risk and the Price of Products — Problems and Exercises — References.

PART IV. PRICE

XVIII. PRICE: INTRODUCTION 285

The Importance of Price in Economics — Prices and Valuations — The Measure of Economic Value —

CHAPTER PAGE

Value is Subjective — Prices Are Relative — Prices and Scarcity — Marginal Buyers — Marginal Sellers — Supply and Demand — Price and Cost — Prices that are not Related in Costs — Why Cost Prices Are as They Are — Problems and Exercises.

XIX. THE GENERAL NATURE OF SUPPLY AND DEMAND . 298

The Price of a Suit of Clothes — A Supply Schedule — A Supply Curve — The Demand for Suits — A Demand Schedule — A Demand Curve — A Supply and Demand Curve — Supply and Demand Equilibrium — The Four Limits to a Price — The Bargaining Range — Given Conditions of Supply and Demand — Problems and Exercises.

XX. DEMAND 316

Demand Defined — Desire and Social Approval — Ability to Buy — The Slope of the Demand Curve — The Elasticity of Demand — Unitary Elasticity — Conditions Determining Elasticity of Demand — The Demand for Anthracite Coal — All Other Things Not Always the Same — The State of the Market — Dividing Up the Demand Schedule — The Forecasting of Demand — Problems and Exercises.

XXI. SUPPLY: (1) FIXED PHYSICAL SUPPLY 336

Supply Defined — Withholdal Prices — The Price of Land — The Supply Schedule of Land a Typical Schedule in Certain Cases — The Cost of Bringing Land into Use — Income from Land May Greatly Exceed Cost of Bringing It into Use — The Rental Price and the Selling Price — The Taxation of Land — The Effect of a Land Tax on the Price of Land — New Owners and the Land Tax — Goods Other Than Land — Problems and Exercises.

XXII. SUPPLY: (2) VARIABLE PHYSICAL SUPPLY 350

What is Cost — Why is Cost as It is? — Past Costs and Future Costs — Cost Differences — The Margin of Transference — Variation in Unit Cost as

CHAPTER PAGE

Output Increases — Increasing Cost Goods — Decreasing Cost Goods — Constant Cost Goods — The Supply Curves of Increasing, Decreasing, and Constant Cost Goods — The Cost of a Single Firm Subject to Decreasing Cost — The Effect of a Tax — Problems and Exercises.

XXIII. MONOPOLY PRICE 370

Monopoly Defined — The Limitations upon Monopoly Price — Monopoly Price without Reference to Cost — Monopoly Price of Goods Subject to Cost — Public Utility Rates — The Effect of a Tax — The "Law" of Monopoly Price — Class-price — Problems and Exercises.

XXIV. THE INTERDEPENDENCE OF PRICES 384

The Interdependence of Prices — Alternate Demand — Joint Demand — The Supply of Alternate Products — Opportunity Cost — The Joint Supply of Products — Wool and Mutton — Arbitrage — Speculation — Problems and Exercises.

XXV. PRICE POLICIES OF SELLERS 398

A One-price Policy — Price Maintenance — Local Price Cutting — Prices and Transportation Charges — Guarantee against Price Decline — Other Features of Price Policies — Price Uniformity — The Inertia and Ignorance of Buyers — Problems and Exercises — References.

PART V. MONEY

XXVI. THE MONETARY SYSTEM 415

The Importance of Money — Banking — Money Defined — The Money of the United States — Free and Gratuitous Coinage of Gold — The Redemption in Gold Standard — The Maintenance of the Gold Standard — Foreign Trade and the Gold Standard — The Urgency of the Demand for Foreign Goods — The Merit of the Gold Standard — Fiat Money — Qualities of Gold of Historic Significance —

CHAPTER PAGE

Gresham's Law — Legal Tender — Seigniorage — The Gold Exchange Standard — Problems and Exercises.

XXVII. THE MONETARY SYSTEM (*Continued*) 437

Paper Money in the United States — The Total Stock of Money in the United States — The Banking System — Payment by Bank Check — Methods of Making Deposits — Time Deposits — Legal Reserves — The Function of a Legal Reserve — The Redeposit of Reserves — Cash Payments and Insolvency — The Elasticity of Deposit Currency — Control Over the Volume of Deposit Currency — Clearing Houses — Bank Notes — Problems and Exercises.

XXVIII. AMERICAN MONETARY HISTORY 455

The Colonial Period — Wampum as Money — The Use of Silver and Gold Paper Money — The Revolutionary Period — The National Monetary System — The Mint Act of 1792 — The Lack of American Coins — Bank Notes — The Use of Bank Checks — The First Bank of the United States — Treasury Notes of 1812 — The Second Bank of the United States — The Coinage Legislation of 1834 and 1837 — The Silver Legislation of 1853 — Bank Notes from 1836 to 1867 — Problems and Exercises.

XXIX. AMERICAN MONETARY HISTORY (*Continued*) 477

The Civil War Period — The Greenbacks — 1870 to 1896 — The Decline in Prices — The Political Effect of the Decline in Prices — Economic Progress — The Cause of the Decline in Prices — The Demonetization of Silver — The Production of Gold and Silver — The Increase in the Output of Goods — The Failure of the Money System — Silver Money, 1850 to 1870 — The Monetary Legislation of 1873 — The Bland-Allison Act of 1878 — The Silver Purchase Act of 1890 — The Industrial Depression of 1893–1896 — If the Bimetallists Had Been Successful in 1896 — The Gold Standard

CHAPTER PAGE

Legislation of 1900 — Bimetallism — International Bimetallism — The Value of Gold — Problems and Exercises.

XXX. American Banking Since the Civil War 496

The National Banking System — Safety of the National Bank Notes — Inelasticity of Notes — Bank Deposits Accumulated in the East — Money Panics — Deposit Banking — The Federal Reserve System — The National Monetary Commission — The Federal Reserve Act — The Federal Reserve Banks and Member Banks — The Federal Reserve Board — The Directors of the Federal Reserve Banks — The Federal Advisory Council — The Reserves Against Members' Balances — Federal Reserve Notes — Federal Reserve Bank Notes — Clearing Through the Federal Reserve System — Interbank Lending — The Control of Credit — Farm Loan Acts — The Federal Farm Loan System — The Federal Intermediate Credit System — Problems and Exercises.

XXXI. Money and Prices 521

The Measure of Price Changes — Secular and Cyclical Price Trends — Price Movements in the United States and England 1791–1925 — The Factors that Determine the Price Level — Gold Inflation — The Equation of Exchange — The Control of Prices — The Compensated Dollar — Bank Credit Control — Price Control By Use of Paper Money — The Return to a Gold Standard from the Paper Standard — Problems and Exercises — References.

Appendix 543

PART I

OUTLINES OF THE PRESENT ECONOMIC SYSTEM

CHAPTER I

THE NATURE OF ECONOMICS

I. THE SUBJECT MATTER OF ECONOMICS

Economic Activity. — All about us we find persons working: growing crops, building houses, laying pavements, manufacturing, transporting and selling goods, loaning money, teaching school, and doing innumerable other things of a like nature. This work, which makes up a large part of the activity of men, is called economic activity.

The Term Economy. — The term *economy* indicates the fundamental nature of economic activity. Air and food are essential to the maintenance of life. Food is almost always so limited in amount, or what means the same thing, so difficult to secure, that men must economize in using it. Hence it is called an economic good. Air, however, under almost all conditions, is so abundant that economy in reference to it is entirely unnecessary. It is thus a non-economic or a free good.

Almost all of the things with which we are familiar are so scarce in relation to our desire for them, that economy of action in procuring and using them is advisable. They are economic goods; they are prized, protected, guarded. They are not free for the appropriation of anyone who may desire them. They may be secured only by the payment of a price. Our activity in relation to these things, or goods, that are desired and are scarce is called economic activity.

Economic Interests and the Pattern of Life. — The economic activity in which men engage is an integral part of the general pattern of life. Economic interests cannot be put wholly in a separate category from the other life-interests. Indeed most of the urges of life from the lowest to the highest depend in part for their realization upon the possession of economic goods, or the modern equivalent, money.

To make friends, to get a husband or a wife, to maintain the respect of one's children, it is necessary that one live according to the standards of one's social group. This may involve the expenditure of considerable sums of money. The truth of this statement may be seen by supposing one's self and family suddenly to revert to the living standards of the average family among our ancestors of three hundred years ago. To live in a house without floors, to eat without forks, to go barefoot, would mean social ostracism in almost all of our social groups.

To be ministered to by a religious leader who is intellectual and deeply spiritual also requires the expenditure of money. If a given congregation is to have the services of such a man, it is necessary to pay a good salary and provide a fitting church building. If this cannot be done, the usual man of talent will serve another community, or go into some other line of work. Furthermore, if a religious leader wishes to serve a modern community he has no choice but to live "as other folks live."

Similarly the æsthetic interests of life, the promotion of community welfare, the maintenance of political government, the defense of a nation, all have a basis in economic goods. These various interests cannot then be set in opposition to the economic interest, since it is out of economic conditions that they are largely served. Rather it is among the various interests that depend upon economic goods for their realization that conflict comes. The fundamental economic problem, both for individuals and communities, is, accordingly, to spend money in such ways that the economic resources will be so apportioned among the different interests that a good life will result. It is, of course, possible that making money or accumulating economic goods, may be made the end of economic activity rather than the serving of interests such as those indicated. There are many instances of such conduct. The economic interest in such cases is truly in opposition to the other interests. But to repeat, for the most part the economic struggle is carried on in order to serve the many interests of life.

Economic Interdependence. — One of the most significant aspects of economic activity is the mutuality of relationships that prevails among men. We are primarily social beings. This is evident from our economic activities, as well as from many other aspects of life. We do not live and work in isolation; we are mutually dependent upon each other. We specialize at various tasks, and by exchanging with each other our specialized services, or the products of these services, we coöperate to serve our economic interests. Every price that is paid for commodities, or land, or labor services, or for a loan of money testifies to the existence of this economic coöperation or interdependence. Every specialized group, such as farmers, manufacturers, merchants, bankers, railway men, lawyers, physicians, and vaudeville artists, is, likewise, evidence of interdependence in the serving of our economic wants. The various forms of specialized economic activity fit together to make a somewhat coherent whole — an economic system. The principal features of the present economic system will be discussed in the two following chapters.

As will be developed in Chapter IV, "A Survey of Economic History," one of the most significant facts of economic life is that throughout the ages there has been a continual increase in the degree of economic interdependence. The extent to which the people of the United States are now mutually dependent upon each other in getting the economic goods which they use is in part indicated by the fact that the railroads of the country carry about fifty million carloads of freight annually. In addition to goods carried by rail, there is a vast quantity of goods that are exchanged which do not enter into railway transportation, and besides these goods, the exchange of personal services that do not contribute to the production of material goods is an important element in the economic interdependence of to-day. This interdependence is, to a large degree, world-wide.

Our mutual dependence can also be seen by noting the relationships that are involved in the production of almost any article of commerce. In a desk, for example, we have the work of the manufacturer and his employees — carpenters, cabinetmakers, finishers — and back of these the sawmill organization that made the logs into boards, and beyond these the loggers and foresters. Further, acting as intermediaries among these different groups and between the manufacturer and the ultimate purchaser are a large number of middlemen — merchants and other traders with extensive organizations. Then, too, transportation, telegraph, and telephone companies, and the post-office service assist in bridging the gaps between the different parties involved. Bankers in their loans of funds, collection of debts, and receipt of money are also conspicuous factors in making the desk available to the user. In addition to all of these, there is a veritable army of persons who have something to do with the construction of mills, factories, stores, and railroads; the mining; refining, and shaping of the metal for the necessary machinery and hardware; the production of power; the procurement of glue, paint, and varnish; and the rendering of services that assist in producing the desk and making it available for use. There is almost no end to the citation of persons who have had a part in enabling the user to have the desk.

The relationship among all of these persons is also made apparent by noting that the price paid by the consumer for the desk, say, twenty-five dollars, is normally the source of payment for all who have made contributions in furnishing it to the buyer. The division of this sum among those who have claims upon it takes place through the pricing process, and is evidence, from another angle, of the close coördination that obtains among the various specialists in our economic society.

Conflict of Economic Interests. — The division of economic income which is effected in the buying and selling processes brings the otherwise mutual economic interests of men into conflict. Buyers — whether of labor, raw materials, finished goods, the loan of money, or the use of land — gain as they buy for less; and sellers gain as they sell for more. In a constantly changing society such as ours, each is forever playing for advantage against the other. These conflicting relationships are, of course, merely one aspect of our coöperative activity. It is only because we are mutually dependent that questions arise as to the division that should be made of the product.

Economics and Public Questions. — Almost all of the leading public questions are within the subject matter of economics, and most of them have to do with the conflict of interests arising out of the fact of mutual dependence. That a question gets into politics means, usually, although not always, that certain groups are pressing for a readjustment of economic relationships in their favor, or in favor of other groups whose interests they have at heart.

Consider the question of a protective tariff. Shall a duty be levied upon all of the sugar that is imported into the United States in order to raise the price of sugar and thus "protect" the American producers of sugar at the expense of the consumers of sugar? Shall such a policy of protection be followed in the case of other goods that are imported? Clearly, there are conflicting economic interests here.

Similarly, conflicting interests are involved in a host of other questions such as those concerning the policies and charges of railroad, street car, gas, electric light, telephone, and other public utility companies; the limitations of monopoly; the control of corporations; the regulation of hours, wages, and conditions of labor; the establishment of social insurance; the control of markets — of produce and stock exchanges; the control of trade unions; and the provisions governing the money and banking systems. These are all questions in economics, and public policy in regard to them is a most important feature of our common life.

The subject of taxation also illustrates the conflict of economic interests and is one of the important questions with which the economist deals. Shall money be taken from taxpayers and used for the benefit of all persons, including non-taxpayers? If so, shall the amount to be secured be taken entirely from the owners of land, or from the owners of other property, or from the receivers of incomes, or from those who make large profits in business, or from those who inherit large sums of money, or from some other group? Each one of these groups would answer these questions differently.

It is, obviously, the purpose of this book to throw light upon these and other questions that arise out of the economic relations of men, and thus to contribute to the formation of a wise social policy in respect to the economic aspects of our life.

The Social Aspects of Economic Activity. — To outline more clearly the field of economics, it may be noted that it does not have to do with all of the aspects of economic activity. A large part of the work of men involves specialized problems that are entirely outside the field of the economist. The work of the engineer, the physicist, the chemist, the geologist, the biologist, and many other specialists is very important in the production of economic goods, but economists are interested only in certain of the aspects of this activity.

How to construct and operate a steam engine, for example, is a problem in mechanics. The economist has no concern with this problem, although the steam engine is of profound importance in economic life. But how men organize companies, raise money, hire and direct employees to construct steam engines, what governs the price that is received for them, how the amount received is divided among all the persons who have anything to do with the process of producing and selling engines, and what is the effect upon social welfare of the production and use of steam engines, are all problems in economics. These problems all have a human, a social, aspect. It is this, together with the fact that they concern economic goods, that makes them problems in economics.

There is, however, a group of problems that are social and that involve economic relationships which are not included in the subject matter of economics. These are the problems that arise in the adjudication of the disputes which occasionally occur in economic relationships. They belong to the science of jurisprudence or law. Decisions of the courts of law, in cases involving such problems, often seriously affect economic relations; and indeed, decisions are often determined by the effect which one or another conclusion of the court would have upon economic welfare. Cases involving labor legislation and trust legislation illustrate this point. Economics and jurisprudence are thus closely allied, although each is a specialty. Law, of course, has to do also with disputes that do not concern economic relations, but most of the controversies among men arise out of a conflict of economic interests. Indeed, this is so true that many persons urge that lawyers should be carefully trained in economics.

II. The Division of the Field of Economics

Writers on economics have classified the field of economics into four parts: Production, Exchange, Distribution, and Consumption. This classification is helpful in calling attention to the important groups of problems that arise out of economic relations.

Production. — The subject of production includes such problems as the utilization of labor, natural resources, and industrial equipment in the production of goods; the organization and conduct of business units such as partnerships and corporations; the management of business enterprises; considerations of the scale, whether large or small, upon which business enterprises are conducted; conditions governing the location of enterprises; the division of labor; and questions that relate to the functions of transporters of goods.

Exchange. — The problems of exchange center largely in the problems of price. What determines the prices at which various goods are sold? Do all prices obey similar "laws"? How does the monopolization of an article affect its price? Is this effect similar in the case of different goods? Is the price paid as house rent, or as room rent, at all affected by the taxes assessed against land? Against houses? These questions are illustrative of the many problems of price that are involved in *exchange*. The use of money and of banking institutions is so closely related to the buying and selling of goods that monetary and banking problems are also usually classified within this division. These involve, in general, a consideration of the effects of different monetary and banking arrangements upon economic relations.

Distribution. — The problems of distribution are those that have to do with the determination of the share of the total product that goes to the different groups of persons who engage in economic activity, or who through ownership have claims to economic goods. All questions as to wages, rent, interest and profits accordingly come within this group, for it is largely through these four channels that the economic product is distributed.

Perhaps it would be better to speak of the economic product as being *divided* rather than *distributed*, for the word *distribution* is commonly used by business men to describe the process of marketing products. However, the long use of the term *distribution* by economists, to indicate the division of the economic product among the different claimants, warrants its continued use in this sense; but care should be taken that the intended meaning is clear.

Consumption. — The consumption of goods has to do with the personal utilization of goods and personal services. Thus goods that are used up in the production of other goods are not within the meaning of this term. They are production goods, not consumption goods. If coal, for example, is used by a householder it is said to be a consumption good, but if used in a factory it is a production good. The term *consumption* thus has a highly specialized meaning when used to refer to one of the four groups of economic problems.

What principles govern the choices of men in their consumption? What is the effect of habits of consumption upon the direction of production? Upon the retardation of economic change? What are the economic effects of luxury? Of saving? These are some of the questions raised by a consideration of the consumption of economic goods and services.

The Overlapping of These Problems. — The necessity of studying only one thing at a time makes some such division as that indicated essential. But it must be borne in mind that this division of the field of economics does not mean that these groups of problems are separate and distinct from each other, for they are in fact markedly interdependent. Wages and interest, for example, two shares in distribution, are prices, and they are at the same time both results and causes of the prices of commodities; further, consumption desires are indicated by the prices that buyers will pay for goods, and in this way direction is given to the forces of production. Money and banking, to give another illustration, sharply affect the processes of production, exchange, consumption, and distribution. This mutual dependence prevails among almost all of the problems of economics. This must not be forgotten when one problem is isolated for special study, as is necessary if one is to understand economic relationships.

III. General Aspects of the Science of Economics

The Literature of Economics. — Economic phenomena have been studied for a long period of time. A vast amount of knowledge has been accumulated and many principles have been formulated. The literature that records these studies is now very extensive. This book is only a very small portion of this literature. In it an attempt has been made to describe the most outstanding features of our economic life as they now appear to scholars in this field. It purports to give a general survey of our economic activity; to present a picture as from an airship of the economic aspects of our life. In other books, in pamphlets, and in articles, whose number is legion, the student may read the reports of scholars who have made intensive investigations of portions of our economic conduct. These are the basis of study in the advanced or specialized courses in economics, some of which are often called courses in business.

Some Features of the Method in Economics. — Economics is abstract, as is any science. To study any body of phenomena it is necessary to take one thing at a time and isolate it, abstract it, from the other elements with which it is found. In studying the relationships between two or more forces it is likewise necessary that they be studied apart from other forces. It is only thus that causal relationships can be ascertained. The final formulations of principles always give credence to this method. They imply or state that forces other than those specified are assumed to be inoperative. Thus to say that a failure of the wheat crop will cause the price of wheat to rise, means that if there is a crop failure and if there are no counteracting forces such as the removal of most of the population by a pestilence, the price of wheat will rise. This assumption is usually indicated in the statements of causal relationships in economics by using the word *tends.* Thus the above principle would be stated as follows: A crop failure will tend to cause the price of wheat to rise.

To say that economics is abstract, does not, of course, mean that concrete data are not used. Hypotheses are usually made at the beginning of a study in economics, or in any science, but their verification normally calls for the collection of a large amount of concrete data. Clearly the more data a scientist has at his command the more likely he is to be correct in his conclusions. Economics has been particularly fortunate during the past few years in that a large amount of statistical material has been collected and made available for use. It has, incidentally, become more and more necessary that economists be able to handle such material effectively.

The question of behavior, or the reaction of individuals to stimuli, is very important in economics, because economics is largely a study in social relationships. Some allowances must accordingly be made for the fact that different persons may react differently to given stimuli. Thus to increase the wage rate per hour may lead some persons to wish to work fewer hours than formerly while other persons will wish to put in more hours. The word *tends* is also helpful here, as its inclusion in a statement of principle allows for the conduct which is exceptional to the general rule.

Some of the sciences deal with phenomena that can be isolated in laboratories and subjected to experimentation under control. This cannot be done in economics. The phenomena studied here must be taken as they are found. As a result it may be necessary to gather evidence over a very long period of time in order to get sufficient data to warrant one in drawing a conclusion as to the relationship of the phenomena under consideration. Until such data are assembled, the economist can state his conclusions only tentatively. For example, the question of the causes of the alternating periods of good and bad times, known as business cycles, has received a great deal of attention from economists, but there is not yet agreement among them as to the causal relationships involved.

Long-time and Short-time Effects. — In studying economic relationships one must in many cases distinguish between long-time and short-time effects, for a given economic phenomenon may produce one result over a short period of time and a very different result eventually. Thus, if a tax is imposed upon dwelling houses the short-time result will tend to be that the rental price of rooms will decrease; but the long-time effect will tend to be that the price charged for rooms will be increased. (The analysis by which these conclusions are reached is developed in Chapter XXI.) The period covered by a short-time result necessarily varies greatly in different cases. It may be any length of time from a few hours to a number of years, but in any case in which short-time and long-time effects need to be distinguished, the nature of the phenomena will indicate approximately to the careful student the duration of the short-time result.

Erroneous Conclusions in Economics. — As has been indicated, in order to reach correct conclusions in regard to causal relationships among economic phenomena, discriminating analysis is necessary. Obviously, not all persons are equally capable of making such analyses. Each person, however, is a part of the economic system, and is in daily contact with economic phenomena. Further, each person's welfare is largely determined by the economic relationships in which he is involved. It is inevitable, therefore, that each individual shall be to some degree a student of economics and shall reach some conclusions in regard to economic relationships. Many of the conclusions that are thus reached by the "man of the street" are merely common-sense observations and are thoroughly sound, but some of them are very unsound. Indeed the analysis of economic phenomena is sometimes so difficult that the conclusions of very able economists are found to be erroneous. Three reasons for the prevalence of erroneous conclusions in regard to economic relationships may be noted.

(1) *Insufficient Evidence.* — A very common cause of error, in economics, as in other fields of thought, is insufficiency of evidence. For example, the conclusions which business men draw in regard to economic relationships on the basis of their experience are sometimes unsound because their experience is too limited to give as much evidence as is required to form correct conclusions.

Closely related to this is the misapplication of evidence. Results, in a large number of instances, are attributed to certain factors when they are not at all responsible for them. The attributing of responsibility for industrial conditions to the political party in power is often illustrative of this fault. The examination of many possible causes in the investigation of any result will help to guard one against reaching a false conclusion in this way.

Conclusions are often reached upon insufficient or misconstrued evidence when phenomena appear in sequence. This is the most common fault in popular reasoning. It is commonly designated as the *post hoc ergo propter hoc* fallacy. It may be copiously illustrated by the superstitions that are so abundant, as well as by unsound economic doctrines. It is perfectly rational to conclude that there may be a causal connection between phenomena that appear in sequence, as, for example, the croak of a frog and the puncture of an automobile tire. Indeed, this was one of the beginnings of the scientific method. But to be scientific, sufficient evidence must be collected to show that the observed relationships are invariable. This will involve getting evidence under such varying conditions that all except the causal factors will be eliminated. "Do not draw conclusions from insufficient data" is an invaluable rule in any field of thought, but nowhere is it more important than in economics, where the common man is so prone to "jump to conclusions" and where his opinion through his vote is so important.

(2) *Deduction from False Premises.* — In reasoning from premises in economics, erroneous conclusions may result because the premises are inaccurate. Clearly, if a premise, either a major or a minor one, is not sound, the conclusion based upon it cannot be sound. One needs, therefore, to be very careful of what is taken for granted in building up an argument. For example, a frequent source of error in the reasoning of business men relative to their workmen is the premise that all men are primarily interested in increasing their monetary income. As a matter of fact, many persons prefer to reduce the time in which they work, or the effort which they expend, rather than to increase their money incomes, and, as will be noted later, they may for still other reasons sacrifice monetary income. Consequently, conclusions based on the premise indicated, although true in certain cases, are sometimes unsound.

The use of false premises comes largely from the habit of making broad generalizations and then using them as a basis for deductions. Economic phenomena are so complex, however, that statements are seldom true unless they are narrowly limited. Incidentally, the love for generalization and the impatience with qualifying conditions often make students dissatisfied with conclusions reached in economics. If a few bold, clear-cut generalizations made up the body of economic doctrine, the way of the student and teacher would be easy; but such is not the case. Economic truth comes in small parcels, and accordingly broad generalizations can seldom be used as a basis for argument. Thus, another important rule in economic analysis is: "Make sure of the premises of the argument."

(3) *Bias and Prejudice.* — The difficulties involved in reaching a sound conclusion are greatly enhanced by the desires of men to believe or to disbelieve certain things. Such desires are commonly designated as a bias for, or a prejudice against, a particular conclusion. There is perhaps no field in which bias and prejudice influence the conclusions of persons other than specialists, so much as in economics. Three sources of bias and prejudice may be mentioned.

In the first place, the influence of others is of great importance in this connection. The opinions which one holds are only to a small degree the result of careful deliberation. During childhood one is constantly receiving impressions from the statements and attitudes of others, and there is, accordingly, built into the mind a framework of fundamental attitudes and opinions upon which one's later ideas are constructed. The individual is often unconscious of these early influences to which he has been subjected, and is, therefore, often unaware that he faces a particular problem with bias or prejudice. The attitude of the average person toward religion illustrates very pointedly the influences of childhood training. An individual finds himself a Methodist, a Presbyterian, or an infidel, and has what he considers to be good and sufficient reasons for his belief. As a matter of fact, however, the *real* reason that the average person holds the religious belief that he does is that it is the belief of his parents. In but few cases has he assembled data, analyzed them carefully, and reached conclusions in a thoroughly scientific manner. Similarly, the attitude that one takes in regard to economic questions, such as the protective tariff, trade unionism, or the government ownership of railways is in most cases colored appreciably by the influence of childhood training.[1]

The influence of associates after one reaches maturity, in the case of most people, tends to augment the early influence of parents. Occasionally, the ideas of later associates are antagonistic to those to which the individual has been subjected in his youth, and at times the later influences are unrelated to those of childhood. But in any case, as a member of certain social groups — clubs, churches, societies, or political parties — the usual individual is subjected to influences which make it almost impossible for him to reach conclusions upon economic or other social questions in a scientific manner.

Second, the influence of self-interest is a very important factor in creating bias or prejudice. When an individual's welfare is involved, he may easily accept certain conclusions which he would otherwise reject. Indeed, this may be the case even when one is not conscious of the influence of one's own interests. It would no doubt be impossible to mention a single economic question upon which many persons have not been influenced by their self-interest to arrive at a certain conclusion.

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[1] Cf. J. H. Robinson, *The Mind in the Making*, 1921, Ch. 2.

The third source of bias or prejudice, which in many cases is identical with the other two, is the hope of the individual that a certain result may be achieved. Persons who are public spirited, or socially minded, are constantly tempted to mix their hopes with their analyses to the detriment of the scientific character of their conclusions.

Perhaps no one can become entirely free from bias and prejudice, but clearly any person who wishes to find the truth concerning any matter should attempt to free himself from these trammels to clear thinking as he approaches the study of a problem. Particularly, for the present purpose, any student who is studying economics should seek to divest himself of bias and prejudice and in a truly scientific spirit attempt to understand economic relationships.

Economic Theory. — There are two meanings commonly given to the word theory. In one sense it is synonymous with the word *principle*, while in the other sense it means the same as the word *hypothesis*. When we speak of economic theory, we almost always mean economic principles, but when we say, for example, that there are two theories in regard to a certain relationship, the second meaning is the one that we have in mind. It is in this second sense that the word is most commonly used in everyday speech, although, to repeat, it is as a substitute for the word *principles* that it is the more frequently used in economics.

The word *theory* is frequently used in antithesis to the word *practice*. This is clearly a valid use of the term *theory* if it is used to mean hypothesis, for hypotheses are frequently found to be unsound. Further, since a proposition that is thought to be a principle — a statement of causal relationships — may be found to be untrue, there is warrant for thinking of theory and practice as not always being identical even when the term *theory* is used to mean *principle*. But if a proposition is in fact a principle, if it is a statement of actual relationship, it cannot be unsound "in practice," for it is a statement of practical relationships.

Unfortunately, college courses in economics are often classified as courses in theory, and practical courses. The difference between such courses is usually that in the "theory" courses principles of general application are considered, as, for example, principles governing the prices of commodities, principles of wages, rent, interest, or economic justice; while in the group of "practical" courses principles of narrower interest are considered, as principles of corporation finance, banking, or marketing. In both kinds of courses, principles are necessarily considered, for it would be idle to treat of phenomena without discussing their relationships. Also, the two groups of courses are practical, for principles cannot be formulated except on the basis of fact, nor understood save in the light of factual illustrations.

At times the specialized courses are called applied courses. This is also an unfortunate phrasing. The implication is that principles that have been learned elsewhere are used or applied in the specialized course. This is perhaps true to a small degree, but if the so-called applied course deals with significant material, it is largely a course in the discovery of principles. The vital difference between the two types of courses, as already stated, is that in the one group, subject matter of general interest is studied while in the other, attention is directed to detailed investigations of specialized forms of economic activity.

Economics a Growing Science. — The science of economics is far from being completed. Additions are constantly being made to the body of knowledge of economic relationships. A few principles are included in this book that have not appeared before in book form, and several that it contains have been formulated only within the past quarter century. This fact of growth should add to the interest of the student in economics. Here as in all truly scientific fields of study no tenet is sacrosanct. Application and critical analysis by some of the college students of to-day may be confidently expected to result in conclusions that will supplement or correct the findings that the preceding generations of scholars have made in this field of thought.

PROBLEMS AND EXERCISES

1. Name five economic goods; five free goods. In the case of the latter, which of the two elements essential to an economic good is lacking? Are all economic goods good? What is the meaning of *good* in the expression *an economic good?*

2. Show the relations between the two words *economy* and *economics*.

3. What is meant by the "pattern of life"?

4. "The use of this land for a cemetery can be defended sentimentally, but not economically." A.

"These two possible defenses are not in antithesis. A defense on the basis of sentiment is merely a defense of one economic use of land — of one use of an economic good — rather than another." B. Is B's point sound? Discuss.

5. Describe the evidence of economic interdependence that can be noted by looking at a merchant's display window.

6. Explain how the $25 paid for a desk normally represents the sum of payments which are made to all the persons who have made contributions in furnishing the desk to the owner. Suggest a case in which service might be performed and not paid for when the desk was purchased.

7. Is there any conflict of interest between a student in a state university and the taxpayers of the state? Discuss.

8. Which of the following subjects are considered by the economist: the price of corn, the function of traders, the organization of corporations, soil fertility, the rights of creditors, the recall of judges, the legal regulation of banks, the issue of paper money, the transmission of electric current, and the taxation of automobiles. Explain.

9. Classify the topics mentioned in problem 8, that are economic, into the four divisions of the field of economics.

10. Give an illustration of a conclusion, not necessarily in economics, that was wrong because of lack of sufficient evidence; second, one that was wrong because of deduction from a false premise; third, one that was wrong because of bias or prejudice.

11. "We'll have to get some of that theory out of his head before he will be of any use to us." A business man, after hiring a university graduate. What did the business man mean? Was his position a reasonable one? Discuss.

12. "All men of prominence in Utopia hold chairs at the university. . . . A professor is able to expound the theory of a subject and then show how the theory is different from the practice of it and why." Prometheus, *The Ohio State Lantern*, Aug. 14, 1925.

Discuss the implication of the last clause in the second sentence.

13. Does the study of economics tend to promote the social welfare? Discuss.

14. "M—— is very thrifty." "Yes, M—— is a good economist." Argue that the second quotation is not in point — that one might be an excellent economist and yet be very uneconomical. Define *economist*.

REFERENCES

A list of standard books in economics is given in the appendix at the back of this volume. These may be consulted with profit in connection with the above chapter and, as well, with those that follow. The leading journals in economics are also listed in the appendix. Current material on the various subjects in economics may be found in these journals. The standard magazines and weekly periodicals frequently contain valuable articles on economic subjects. The books and articles referred to in the footnotes also contain excellent supplementary material.

Among the books listed in the appendix special attention may be called to O. F. Boucke's *Principles of Economics*, 1925, in connection with the subject matter of this chapter. In Appendices I, II, and III, Volume II, Boucke gives a valuable treatment of the subject matter of economics, the relation of science to economics, and method in economics.

CHAPTER II

THE ECONOMIC SYSTEM: ITS COÖPERATIVE ASPECT

In the preceding chapter it was emphasized, among other things, that the economic activities of men are so interrelated that they make a coherent whole or system. It is the purpose of this and the following chapter to sketch the main outlines of the present economic system. The remaining chapters of the book, excepting the fourth, will be devoted to an analysis of the different parts or details of the system.

The Coöperative and the Technical Aspects. — In ascertaining the main characteristics of an economic system there are two questions to be answered. First, how is the coöperation of the various persons within the system effected and regulated? In other words, how are the activities of the different persons correlated into a systematic whole? Secondly, by what method or methods are goods produced? by agriculture or manufacturing? by tools or machines? by small or by large groups of persons working together? The first question refers to what may be designated as the coöperative aspect and the second to what may be called the technical aspect of the economic system. This chapter will be devoted to a consideration of the first and the subsequent chapter to the second of these groups of questions.

I. Methods of Effecting Coöperation

There are two sharply contrasting methods of bringing about coöperation in an economic society. One of these is the method of strict regimentation. In a society based on this plan, there would be an entire absence of freedom. The persons in the position of authority would determine the kinds of work to be done, the methods to be used, and select the persons who were to perform the various tasks. So far as control in such a society is concerned, life would be comparable to that in an army. In an army all persons serve under direction. There is no freedom of choice in regard to what is to be done, nor in regard to the means that are to be used in accomplishing it.

The authority that is exercised in a society that is marked by an entire absence of freedom might be derived from the consent of all of the persons concerned, or it might come as a result of the tyrannous imposition of a few persons. Further, such control might be exercised not by a centralized political authority, but by various groups or guilds, each group controlling a given kind of work.

The other extreme type of economic organization — the one that contrasts most sharply with the one just noted — is one in which there is a spontaneous, voluntary choice of tasks by the different persons in a society. There would, in such a system, be perfect freedom in the interchange of goods and services and no pressure upon any one to perform given tasks, or to conduct his business or do his work in a certain way. In short, in such a system, there would be an entire absence of authority.

The first type, when the control is political and democratic, is usually designated as Communism and the second as Anarchism. The first of these may also be described as Socialism, or Collectivism, or when the control is by economic groups (guilds or business associations) it might be known as Guild Socialism or Syndicalism. The second type may be described as Individualism. These alternative terms, however, do not usually indicate such extreme types of organization as are denoted by the two words, *Communism* and *Anarchism.*

The actual societies that exist are almost necessarily compromises between these two extreme forms. The independent spirit of men would make most persons intolerant of the restrictions of the one; and what is closely related to independence, the self-interest tendencies of men, would lead the strong and cunning to impose so upon the weak and ignorant that the condition of "freedom" could not be maintained in the other.

The choice then as to the kind of economic organization that a community or nation is to have is not normally between extreme individualism and extreme socialism, whether political socialism or guild socialism, but rather as to the extent to which restrictions are to be imposed upon individuals, or, to state the same thing in another way, the extent to which the principle of socialism is to be applied.

II. Freedom in the Present System

The economic system that prevails in the United States is nearer to Individualism than it is to Socialism. That is, the freedom of individuals is more pronounced with us than is the exercise of authority. Most of our economic goods are owned by private individuals, or by groups of individuals, rather than by the people collectively through the agency of government. Further, the private owners of these goods have a great deal of freedom in using them or in disposing of them. This condition can be indicated by saying that our system is one of private property. But the restrictions upon private property are so extensive to-day that our system is considerably removed from a state of Individualism.

State Socialism. — State socialism, as the term is usually used, is a form of organization that is much nearer to the pole of Socialism than it is to the pole of Individualism. The tools of production in such a society — the farms, factories, mines, stores, banks, and railroads; the municipal services such as water, gas and electricity; and the schools, roads, parks, and libraries — would be owned collectively through the government. The workers in such enterprises would receive wages and would be free to use the sums received to buy goods from the state, or from private producers, if there were any such.

While private property is dominant in our society, there is a considerable amount of government ownership and operation. The post office, public schools, state universities, roadways, bridges, parks, libraries, and to a varying degree in different cities, the facilities for supplying gas, electricity, and water, are publicly owned and operated. These cases are by no means extensive enough to warrant calling our society one of State Socialism, but they are illustrative of the processes of State Socialism, and may properly be said to be Socialistic.

Government Regulation. — Government regulation of private property may be so extensive that Socialism rather than Individualism may be said to prevail, even though property is owned privately. In the case of certain industries in the United States, as, for example, the railroads, there is such close supervision and regulation by the national government and the state governments that the owners have but little freedom in running them. Likewise, the private companies that furnish street-car transportation, gas, electricity, water, and telephone service are very closely regulated. Many other forms of private property are subjected to some degree of control by the different units of governments. Regulations providing for safety devices in factories and stores, for sanitary conditions in food shops, and for full measure in the sale of goods are all illustrative of limitations that political authority places upon the use of private property.

Regulation by Business Associations. — In addition to the growing volume of government regulation over economic affairs, an increasing degree of control is being exercised by business associations in the various lines of industry. Such associations exercise control in an informal rather than in a formal manner. They do not have formal authority as does the government, but by business and social pressure associations may be very effective in getting all of their members to follow the policies that are adopted. Associations in certain lines of industry determine the prices that are to be charged for the products, regulate to some extent the volume of output, and determine the territory in which the various firms are to do business. This control is necessarily informal, as formal control of this kind would be held to be illegal. Labor policies are also subject to some control by associations of business men. The work of such associations will be more fully discussed in a later chapter dealing with trade associations.

Labor associations, in the form of trade unions and associations of professional men, are also of significance in regulating the economic conduct of the members thereof.

Freedom. — But although the restrictions upon the conduct of economic activity — the limitations upon private property — are very marked and are much more extensive than they were one hundred years ago, there is still a very large degree of freedom in our economic society. Property is largely owned by private individuals, or groups of individuals, rather than by the government, and individuals are free to undertake almost any line of business. Practically, however, many individuals may be restricted from entering certain fields because of not being able to secure enough money to undertake effectively the work in question. But within an establishment, there is a high degree of freedom in regard to the methods of work to be followed, the labor policy to be pursued, and the plan by which the goods shall be marketed. As laborers, men have a high degree of freedom in choosing the lines of employment that they are to follow; and as consumers they are almost entirely free to spend their money as they see fit. In conclusion, the basic element in our society is freedom. Stated in other words, our society is based upon private property, and phrased still differently, individual initiative is largely relied on to secure the production of economic goods and services.

The Complexity of the Present System. — Our economic system, which is thus based primarily upon the principle of individual freedom, is one of great complexity. Millions of men and women fit into it and as each person or firm carries on a specialty, the necessities, comforts, and luxuries of life are produced with a surprisingly nice adjustment among the thousands of different kinds of goods that are produced. The system is by no means perfect in this respect, as will be noted presently; but in view of the complexity of the society, the goods and services that flow from the thousands of lines of economic endeavor are remarkably well adjusted to each other.

Economic Advantage. — The individual initiative which is thus so largely depended upon to get the world's work done, normally follows the lines of economic advantage. As a buyer, one usually tries to get the most for the money spent, and as a seller of labor services or as an investor of money, or as a producer or seller of goods, one normally seeks to get the largest possible income. But there are, of course, as indicated in the phrasing of the preceding sentence, limitations upon the quest for economic gain.

The economic aspect is only one of the aspects of life and in case of conflicts it is by no means always dominant over the other life-interests. To keep faith with a friend, to refrain from doing what associates would consider an unethical act, to obey one's conscience, to be generous, just, or fair, are more to be desired by most men than economic gain. But within the code of conduct that is observed in his group, the normal individual seeks to serve his economic interest. All other things being equal he "buys cheap" and "sells dear." It is thus the seeking of economic advantage that *places* most individuals as workers or as investors in our productive process — that determines what different goods and services shall be produced, and in what relative quantities they shall be brought out.

If, for example, we are undersupplied with houses in relation to other things, as was the situation in America at the close of the World War, the prices which are offered for houses, either for rent or for purchase, will go up. As a result, the profit to be derived from owning houses will increase, and the demand for new buildings will be augmented. This will increase the demand upon contractors and will induce more persons to enter this line of work. The price of building material will then be increased and more persons will be encouraged to engage in its production. Similarly, this will tend to increase the wages of building tradesmen and will call a larger supply of labor into these fields.

On the other hand, if there is a relative oversupply of some good, as compared with other goods, which was true of cotton in the summer and autumn of 1926, its price will fall, and persons will thereby be encouraged to cease the production of that article and to turn to the production of other things. Or if new opportunities to make money are opened up because of the development of a new product, as the automobile two decades ago, or the radio very recently, the new lines of production will be undertaken and old ones will be, to some extent at least, abandoned. It is in this way, through fluctuations in price, or the appearance of new opportunities, with the consequent effect upon the income of individuals, that adjustments are made from time to time among the various lines of economic activity.

But, to sound a note of caution again by way of guarding against the acceptance of sweeping generalizations, the adjustments among the various lines of work may be very crude. The output from certain industries over a long period of time may be too large, in view of the output from other industries. For example, careful observers have insisted for several years now (1927) that there are entirely too many soft coal mines in operation; the agricultural industry has been in a state of depression for seven years; and the production of oil has been so excessive for many months that oil companies have lost heavily and oil has been wasted. Men are only slowly pushed out of an overcrowded industry. Further, at rather frequent intervals part of the economic machinery becomes stalled in what is known as an industrial depression. The regulation of our society through private individuals seeking economic gain is thus far from perfect. For a long time now as already indicated, and as will be emphasized later, there has been a definite movement toward the exercise of control over individuals by the government and by associations. But it is the principle of individual freedom in economic activity that is largely relied upon as a regulator and director of the economic life of the country.

The placement of individuals in the economic society concerns not only the determination of the kind of work which the various persons are to do but the firm or corporation with which each is to render his service. Thus placement does not involve merely the direction of an individual into the field of banking, for example, but the determination of the particular bank for which he is to work. It may not be necessary to pay a certain man $20,000 a year in order to get him to be a banker, but it may be necessary for one bank to pay him this amount in order to induce him to leave another bank and join its forces. Further, even when non-economic considerations are the impelling force in causing one to choose a given line of work, as, for example, the ministry, the pull of economic rewards normally determines the choice of positions within that field. With all other things equal, economic gain is normally the effective force that determines placement at the various economic tasks.

Marginal Producers. — The shifting of individuals or firms from one line of work to another is so pronounced a feature of our economic society that a special term is used to designate those who at any one time would be the first to leave a given employment. They are said to be *marginal;* they are on the margin, or at the margin, in that particular work. The shifting which shows that given persons or firms were marginal in their groups is almost always the result of choice, but it may be compelled as by the action of creditors in forcing a firm into bankruptcy, or by employers in dismissing employees.

It has been a somewhat traditional practice to define those on the margin as the ones who would be *forced* out of the line of work in question by an adverse price change. Thus a fall in the price of dairy products or an increase in cost prices to dairymen might compel the most inefficient dairyman to quit this line of work. But clearly such price changes might also cause certain highly efficient producers of dairy products to turn to the production of agricultural crops; or if there are no adverse changes in the prices involved in the dairy business, but changes of such a nature in other prices that the growing of fruit, for example, becomes much more profitable than before, this also might cause some of the most efficient dairymen to forsake that business.

Since the principal significance of the *margin* concept has to do with the shifting of economic agents from one field of endeavor to another, it seems desirable to define marginal producers as those persons or firms that would be the first to leave a given line of work because of some change that makes their work unprofitable, or less profitable than formerly as compared with other lines of work, or because they come to know of more advantageous conditions in other employments which may have existed for some time. Defined in this way, the term *margin* may refer to persons or firms of any possible degree of efficiency, although it would perhaps usually refer to the least efficient ones.

The shiftings of marginal producers which the lure of economic advantage thus brings about in our economic society do not necessarily involve a change in the work of many persons. It may only be necessary that relatively few persons should leave or enter a given line of work in order to relieve the relative oversupply, or undersupply, of workers in that field as compared with the supply in other fields. The situation is somewhat comparable to that which is commonly observed in a grocery store as a clerk is weighing out, say, a pound of crackers. After he makes his initial estimate of a pound, it is normally necessary for him to add, or to take away, only a few units in order to bring the scales into balance. The dropping out of only a few laborers or producers may easily correct the lack of balance among the different lines of industry, at a particular time.

Further, the holding of the proper proportions among different lines of work is in part effected by young persons being attracted to particular fields or discouraged from entering others, because of the economic opportunities which prevail in different occupations; and by workers dropping out of industry on account of death or old age, or in the case of many women, because of marriage. There are about 1,000,000 men and nearly as many women beginning work in the United States each year and almost that many men and women giving up their work. The incorporation of the newcomers into the working population of some 43,000,000, and the subtraction of those who leave, must have an appreciable effect in adjusting the number of workers in each of the various lines of industry to the relative demands for the different products.

The concept of margin applies to lands, industrial plants, and other instruments of production as well as to persons. Certain parcels of land among those devoted to any of the different purposes for which land may be used are almost certain to be marginal in that use at any one time. Slight changes in the relative profitableness of any two crops may be expected to

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cause a change in the utilization of some land. Similarly, some land that is used for residence sites would be used differently if changes should occur in respect to the profitableness of using it in some other way.

Likewise, some factory buildings, some machines, some automobiles, some milch cows, and some race horses are marginal in their respective fields, and as economic conditions change adversely to any particular group, the ones that are on the margin in that group are transferred to other groups. It is thus that readjustments are constantly being made — that a new balance is ever being struck — among the various lines of economic enterprise.

Competition. — This process by which adjustment is made among the individuals in our society and among the lands, machines, and other goods that are utilized may also be described in terms of competition. In fact, competition is so dominant that our economic organization is commonly spoken of as "the competitive system." Those persons wishing to rent or to buy houses compete against each other, and so all along the line. There is competition on the part of builders for the services of contractors and dealers in materials; and laborers and the furnishers of materials compete in the sale of their services and goods. Further, competition is even wider than this indicates. House builders compete not only among themselves for the services of contractors, but against all other persons who may use the contractor's services for any purpose. Brick manufacturers compete among themselves and also with producers of lumber and stone; and the entire group competes against all other persons who have goods or services to sell, for, in so far as one pays money in building, buying, or renting a house, he is thereby prevented from spending it for other things. In short, there is competition for the consumer's dollar among all persons who have goods or services to sell.

The competitive forces pull in a thousand directions and tend to maintain that proportion among all the commodities and services offered on the market that will give to the various producers the largest possible returns.

The emphasis thus far has been upon the part which competition plays in our economic society in assigning individuals to their respective tasks. There is bound up with this a function of competition which must not be overlooked; namely, that of allotting goods to consumers. It is through competitive bidding that it is determined who may have the goods and services that are available for consumption. This is usually not apparent, for the competition among sellers is generally so keen that the competition among buyers is obscured. It is very real, nevertheless. The goods that are bought by one cannot be secured by another; and the purchase of goods at a certain price prevents their being had at a lower price by those who would not, or could not pay the first price. This competitive process among buyers is part of the *placing* function of competition, because places will be taken by individual producers in the economic system according to what users will buy. If the price at which silk hats can be sold is sufficient to warrant it, certain persons will begin to make silk hats.

Occasionally, the function of competition in allotting goods among consumers is not connected with the placement of producers. This is true in the case of goods that are already produced and that cannot be replaced, or of goods that because of a strike of laborers, or a war, or for some other reason, are for the time being not coming on to the market. Competition decides then what persons are to have the goods that are available but, by the peculiar circumstances that exist at such a time, it does but little, if anything, in the way of directing the further production of such goods. Under such conditions, the public welfare may warrant the distribution of goods on some basis other than competitive bidding. If, for example, during severe winter weather, there is but little coal in the coal yards of a city and more cannot be procured, it may be advisable to ration the coal among the persons needing it, for otherwise the poorer people might have no fuel at all. In certain other cases, which will be discussed presently, competition is not effective in directing economic activity into desirable lines, nor in securing fair charges and adequate service to consumers, and as a result it is not relied upon in such cases. But, in general, the principle of competition prevails throughout our economic society, and is relied upon as the means of caring for the needs that should be satisfied.

The competitive forces do not operate merely through price differences. Rival firms, traders, practitioners, or laborers may compete keenly with each other without any attempt on the part of any one to cut the price of the product or service. That is, a competitor may attempt to get or keep business by offering a superior quality of product, or more liberal terms of payment, or unusual service or courtesy to the buyer, or merely by duplicating the offers of others.

Indeed, the self-interest of competitors tends to prevent price cutting unless the line of work in question is overcrowded in relation to other lines of work. If a newcomer, for example, offers goods or services below the customary price, this will tend to give him patronage, but a similar price reduction by those already in the field would remove the advantage which he had gained and put him in a worse position than he was in at the start. He would still be struggling for business, and such as he got would be secured at a less remunerative price than prevailed before he instituted the lower price. Further, those already in the field are normally far more able to endure a cut in price than is the one who has only recently taken up the given line of work.

If, however, an industry is so crowded as compared with other fields, that the total output cannot be sold at the customary price, a reduction in price will tend to result. The initiative in such a movement in a field of business is likely to be taken by the larger and more securely established firms. Similarly, if there is an opportunity for a price increase, the well-established firms usually take the initiative in advancing the price. This tendency to follow the "leading" firms does not make the force of competition any less selective — any less the means of placement — than if this were not true. For regardless of how it comes about, a price reduction tends to eliminate some producers or workers, and a price advance tends to call into a given field persons and firms that were employed otherwise. And even if there is no price change, the entrance and establishment of new workers or firms, or the elimination either of newcomers or of those long in the field, means that the forces of competition are thus placing economic agents at the various tasks.

Statistics of Employment in Different Fields. — In view of what has just been said concerning the shifting of persons from one line of work to another, it is interesting to note the statistics of employment in certain groups of industries over a period of time. Table 1 shows the relative number of persons employed in the different groups of manufacturing industries for each fifth year from 1899 to 1919 inclusive. The number of wage earners in each group for the year 1899 was used as a basis for comparison and was thus made equal to 100.

TABLE 1

INDEX NUMBERS OF WAGE EARNERS EMPLOYED BY GROUPS OF MANUFACTURING INDUSTRIES, 1899 TO 1919. (1899 = 100)[1]

Groups of Industries	1899	1904	1909	1914	1919
Chemicals and allied products..........	100	116	136	152	217
Food and kindred products............	100	117	136	164	227
Iron and steel and their products	100	117	138	142	213
Leather and its finished products.......	100	106	125	124	141
Liquors and beverages................	100	124	141	160	101
Lumber and its remanufactures	100	109	136	124	125
Non-ferrous metals and their products...	100	123	155	162	210
Paper and printing....................	100	118	139	152	171
Railroad repair shops..................	100	137	169	203	285
Stone, clay and glass products..........	100	123	148	144	129
Textiles and their products............	100	113	141	147	158
Tobacco manufactures.................	100	120	126	135	119
Vehicles for land transportation.........	100	102	152	197	371
Miscellaneous industries...............	100	125	147	176	369
All industries, United States............	100	116	140	149	193
Population of the United States (approximate index)[2]...............	100	110	120	130	140

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[1] National Industrial Conference Board, *A Graphic Analysis of the Census of Manufactures*, 1923, p. 15.

[2] Based on data from p. 3, *ibid.*

During these twenty years, the population of the country increased approximately 40 per cent (from 75,994,000 in 1900 to 105,710,000 in 1920). The index numbers of population for the years indicated are approximately as given in the table. Thus index numbers of employment in the different groups of industries of 110, 120, 130, and 140 respectively for each of the last four dates would not show shiftings from one line of industry to another, but merely an increase in each group corresponding to the increase in the total population. But a glance at the table shows that the numbers in the different lines of industries were not thus adjusted to the changes in the population.

At each of the four dates following 1899, marked changes are indicated among the different lines of work. From 1899 to 1904 the increase in persons engaged in the manufacturing of vehicles for land transportation shows a marked falling off as compared with the increase in the population, and the number of workers engaged in the repair of railway equipment shows a considerable increase during these five years as compared with the increase in the population, or with the number of workers in any of the other designated fields. At the following dates, the number employed in making vehicles for land transportation, which came to be largely automobiles, shows a great increase, but not until 1919 is the percentage increase in this group equal to the percentage increase in the number engaged in railroad repair shops. It is especially interesting to note the consistently low increase at these dates in the number employed in the manufacturing of lumber and wood products.

In 1919, four of these fourteen groups show an increase in numbers engaged as compared with 1899 that is less than the increase in the population during this time, 40 per cent, and seven show an increase that is greatly in excess of the increase in the population.

At this place we are not especially concerned as to why these relative changes in the different lines of employment took place, nor whether the changes were advantageous to the business men and laborers involved, but merely with the fact that changes do occur. It may be well, however, to observe that the relative changes in the different lines of employment for 1919 as compared with 1914 are unusually large on account of the World War. Further, it is well to note that the relative shifts in these numbers are only in part due to changes in the demand for different commodities. They come both from such changes and from changes in methods used in manufacturing. The introduction of machinery, for example, might lead to a decrease in the number employed in a given line of work while the volume of the product was being increased. But, to repeat, the point to be emphasized here is that shiftings of persons are constantly taking place among the different industries. Data in regard to agriculture are not included in this table, but if they were, they also would indicate changes in volume of employment from time to time.

Voluntary Restrictions on Competition. — As economic gain may be secured by entering into competition against others who are in profitable lines of work, so it may be conserved or enhanced by preventing the competition of others. Thus individuals are prompted to eliminate or restrict the competition of others when it is possible to do so. This means, of course, that a condition of monopoly is most desirable to producers. To that end, patents, trade secrets, exclusive franchises, the control of limited natural resources, and trade agreements are desired. But, as will be developed in the chapter on monopoly price, the ability of most monopolists to control the prices of their products is sharply limited by the competition of persons and firms in similar or closely allied lines.

The most common form of restriction upon competition is the adoption by a group of competitors of rules designed to limit their individual freedom in the interest of the group. The employers in a district or city may pledge themselves not to hire anyone who is already employed by one of their number. Or, they may agree to pay no more than a specified wage. Similarly, laborers may mutually agree to accept employment only on the payment of at least a certain sum. Likewise, physicians may adopt a scale of charges to which each is to adhere, and bankers a rate of interest on deposits that no one is to exceed. Producers in various lines of industry may form associations as noted above and agree as to output and prices, although this is usually done informally because our laws seek to prohibit such agreements. Also, it may be regarded as bad form to attract customers or clients away from one whom they are patronizing. These and other similar practices are found very frequently and are a definite part of the present economic system.

III. AUTHORITY IN THE PRESENT SYSTEM

It was pointed out at the beginning of this chapter that the nature of man is such that it is necessary to impose at least a few restrictions upon economic conduct in order that the interests of some persons will not be jeopardized by the selfish conduct of others. These restrictions are to some extent self-imposed, as when, for example, a group of persons in some one line of enterprise draws up a code of rules specifying what is deemed to be ethical conduct. Then, too, there are unwritten rules of conduct which cannot be transgressed by a business man without his losing the esteem of his fellows. Some of these restrictions are devised in order that justice may be secured, and others have for their purpose the securing of economic gain by the persons immediately concerned, as noted above.

Restrictions by the Government. — The self-imposed restrictions upon conduct that are in the interest of the general public are of the nature of the prohibitions that are imposed by statutory law, but they are so informal in character that it is hardly permissible to speak of them as restrictions by authority. It is to restrictions by the government rather than to such informal restrictions by individuals or groups that attention will be directed in the remainder of this section. In addition to the enactment of restrictive legislation, the government may engage directly in economic enterprises, or it may through boards and commissions regulate business units that are owned by private individuals. All of these forms of activity by the government will be considered in the following discussion as included in the exercise of authority in the present system.

First, it may be noted that our various political divisions perform the primary function of government in protecting life, liberty, and property; and in providing an orderly judicial procedure for the adjudication of disputes and the enforcement of contracts.

Second, government regulations to some degree determine the level of economic competition. In the game of golf, for example, competition is normally very keen but the opposing players usually take meticulous care not to interfere in any way with the best possible playing of each other. The competition is on a very high plane. In some other games a different code of ethics prevails. Similarly, in business, competition may be on different levels of desirability. If one manufacturer employs young children, or if he employs women for excessive hours, or at night, or at very low wages, then competitors may be forced to adopt similar policies or fail in business. The government may, however, by prohibiting such practices raise the level of the competitive struggle throughout a community or line of business. The growing body of factory legislation and the work of official inspectors in promoting its enforcement are illustrative of government interference to this end.

In the third place, the governments of the various American states and the national government seek to enforce competition — to prevent the existence of monopolies in the usual lines of business. The so-called anti-trust, or anti-monopoly legislation is an important part of our statutory law and the prosecution of the violators of these laws is one of the chief functions of government attorneys, particularly in the case of the federal government.

Fourth, the political government interferes in private enterprises where competition fails to secure either satisfactory service or reasonable charges. Several different kinds of cases may be given to illustrate this point. In the field of what is known as public utilities, private enterprise cannot be relied upon to give fair prices, nor, in certain cases, good service. In the municipal public utilities the necessity of using the streets for car lines, gas mains, and water pipes obviously makes competition impossible. Government officials, or the voters, must decide which companies are to have the exclusive rights to the use of the streets for these purposes. Further, street car service can be furnished efficiently only if there is a single system. Likewise, good telephone service depends upon having one system. And in order to have efficiency of operation — low cost per unit of output — monopolization in the supply of gas, electricity, and water is desirable. The policy of granting exclusive franchises to certain companies in these various lines is accordingly the almost universal practice, save where the city itself elects to provide a given service. The granting of such monopolies to private concerns makes it imperative that the city authorities regulate the rates that are to be charged, for only in that way could consumers be assured of fair prices for such services.

Railroads are also closely controlled by the political government. In some countries, they are owned and operated by the government. The practice of strict regulation is followed in America. The organization of competitive companies was encouraged in this country in the early days of the railroads with a view to controlling the rates and practices of railroads through the force of competition; but this plan proved unsatisfactory, for reasons which will be given in a later chapter,[1] and it became necessary to exercise political control over the railroads.

The vital importance of wholesome food and of honest drugs has led to a great deal of government supervision over the preparation and sale of these articles, particularly as more and more persons have come to depend upon others for these goods.

There are other lines of service in which government ownership and control, not merely regulation, is the rule. Postal service, education, lighthouses, highways, bridges, streets, and sidewalks, for example, are almost exclusively provided by the government.

Fifth, most national governments play a part in our economic system by restricting the importation of goods into their respective countries. When this is done the object sought is almost invariably the curtailment of the competition of foreign producers with home producers, and is usually strongly encouraged by those persons whose lines of business are thus protected from foreign competition.

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[1] Chapter XXXVII.

Lastly, government activity in the field of economic relationships may take the form of prohibition of certain lines of private enterprise. The prohibition of the manufacture and sale of intoxicating liquors is illustrative of such government action.

Variation in Degree of Government Restriction. — Obviously, the line that is drawn in our economic system between individualism and collectivism, between freedom and restriction, is in no way fixed and determined. That is, the degree to which private enterprise is relied upon to furnish goods and services, as compared with the people's collectively producing them through government activity, and the extent to which private enterprise shall be regulated, or prohibited, depends upon the choice of the electorate, or their representatives, and this necessarily depends in large part upon the degree of economic interdependence that prevails.

There has been a great increase in the amount of government activity in the United States during the past seventy years. This is not confined to the regulation of economic conduct but it is almost entirely so. This increase in government activity may be explained very largely by the great increase in the degree of economic interdependence during the period indicated. In other words, as specialization has been extended, and as men have accordingly become more and more dependent upon each other, they have to an increasing degree prescribed rules and regulations governing their economic activity. In the early history of the railway industry, for example, neither individual business men nor communities were particularly dependent upon a railroad. But as the railroads grew in importance, as they came to have power through discrimination to control the prosperity of individuals and of entire cities, and as competition failed to force them to act in accordance with the public interest, they were subjected to government regulation.

But although there is considerable government activity in industry to-day, the economic system is predominantly a system of free enterprise, as was stated above. Almost all possible lines of economic endeavor are open to any person, so far as the government is concerned, and in them one has a large measure of freedom in carrying on the work.

Just how far government activity in economic matters should be carried is always a mooted question. A discussion of this subject is outside the scope of this chapter, the purpose of which is to describe briefly the principal features of the present economic system. It may be noted, however, that since government interference in industry is usually due to the failure of private enterprise to serve or safeguard the public interest, business leaders have it in their power to forestall government regulation to some degree by themselves correcting conditions that are subversive of social welfare. Associations of business men are to some extent to-day showing an appreciation of this fact and are attempting to shape the policies of their respective industries so as to foster conditions that will not be subject to adverse criticism. But, however circumspect business men may be, change in the economic system is inevitable, as will be emphasized by the historical review in Chapter IV. The present-day alteration in economic life is definitely in the direction of an increase in the degree of economic interdependence. This will almost inevitably make the further extension of government activity desirable.

Indeed, no fact in history can be clearer than that the degree of individualism, or the degree of socialism, to look at the other side of the matter, has never for long remained unchanged. Nothing is more certain than that human relationships have been subject to change in the past. This suggests that we need to use great care in speaking of *natural rights*. Usually that which is deemed to be *natural* and thus everlasting is merely that which has become customary during a given period of time while certain conditions have prevailed. To expect conditions to remain unchanged and rights unaltered is to expect history to come to an end.

PROBLEMS AND EXERCISES

15. Why should we expect neither an extreme form of Communism nor Anarchism to be of long duration?

16. "In the present economic system, placement of producers depends upon price offers." Is this true? Discuss and illustrate your answer.

17. (*a*) Give an illustration from your experience of your being a marginal buyer; a marginal seller of labor services.

(*b*) Assume a case in which you would be a marginal producer of automobiles.

(*c*) Under what circumstances might Mr. A be a marginal buyer of corn?

(*d*) If next season 1500 farmers should cease raising corn and instead raise wheat, how could this be described in terms of margins? If 1000 plumbers should become wall-paper hangers?

18. Assume a case in which a machine now used in manufacturing tables is marginal.

19. "In our economic system, the goods which men want most are the ones that are produced." Discuss.

20. Describe circumstances under which the building occupied by a restaurant would be marginal in that use.

21. How do landlords compete against bakers?

22. If you were planning to go into the steel manufacturing business, would you begin by offering your product below the customary prices? Explain.

23. Show how the level of competition may be raised by a group of business men; by the government.

24. Has the automobile led to an increase in the amount of governmental regulation? Explain.

25. Give five illustrations of restrictions upon private property.

26. Is the line between individualism and collectivism to-day drawn in the same place that it was a generation ago? Why or why not?

27. "Our economic system is coöperative yet competitive." Discuss.

REFERENCES

In addition to the books listed in the appendix, Thorstein Veblen's *The Theory of Business Enterprise*, 1904, may be examined profitably in connection with this chapter. F. M. Taylor's *Principles of Economics* contains a splendid description of the coöperative aspects of the present economic order.

CHAPTER III

THE PRESENT ECONOMIC SYSTEM: ITS TECHNICAL ASPECT

Machinery. — The distinctive technical feature of present-day economic life is unquestionably the use of machinery. In the extent and efficiency of its machines this age is marked over all preceding ages. Men have used tools for unnumbered centuries, but it is only within the past one hundred and fifty years that they have had machines. Further, it is only during the past half century that machinery has attained its present importance.

Agriculture and Other Pursuits. — A significant technical feature of our economic society is the small proportion of the total population engaged in agriculture to-day as compared with earlier dates. At the beginning of the nineteenth century, nine out of every ten persons lived on farms and eight out of every ten at the middle of the century, but now less than three out of ten live on farms. According to the United States census of occupations only 570,000 more persons were engaged in agriculture as farmers or laborers in 1920 than in 1900. But during these twenty years the population of the country increased by 30.5 million. The proportion of the total number of workers who are in agriculture has declined from 44.3 per cent in 1880 to 26.3 per cent in 1920. In 1900 the corresponding figure was 33.1 per cent. From 1920 to 1927, according to the Department of Agriculture, the number of persons on farms in the United States decreased by approximately 1,500,000. During these seven years the population of the country increased by about 11,000,000. Another phrasing of this is that the population of the country increased by 55 per cent from 1900 to 1927 and the labor force on the farms decreased. It must be noted in this connection that our exports of foodstuffs have decreased during the past few decades and that our imports of food have increased. This alone would account for some change in the farming population of the country as compared with the total population. But allowing for this, it is evident from the above figures that relatively fewer persons are needed to-day than formerly to produce the food supply of the nation.

The relative reduction in the number of farmers has been made possible by technical improvements that had been made during this time. Stated differently, the improvements in farming during these years have made it possible for the entire increase in the country's labor force to go into non-agricultural lines of work. This is the fundamental effect of machinery. Its introduction lessens the time needed to produce the basic necessities, food, clothing, and shelter, and thus releases labor power for the performance of tasks that could not otherwise be undertaken.

The Factory System. — The method of carrying on manufacturing by the machine process is commonly called the factory system. By the factory system is meant that work is carried on outside the home, or off the premises of the individual worker, by groups of workers in places especially designed for such work.

The factory system is necessary to the utilization of high power machinery and expensive equipment. Indeed, it was the development in these lines during the close of the eighteenth century and the beginning of the nineteenth that led to the rapid extension of the factory system. While factory methods of work had been employed to some extent in using the simple tools of the preceding period, the utilization of water power and later steam in the operation of machinery made the system of home manufacture practically obsolete, and gave us the modern factory system.

The beginnings of this system date from the transference of the cloth-making industry from the homes of the English people to factories during the period of time just mentioned. The significance of this change in the method of making cloth may be seen by noting that probably for thousands of years spinning and weaving had been the leading household arts. The part that this work occupied in the lives of women before the advent of the factory system is indicated by the fact that the word *distaff* was commonly used in referring to the women of a household, and that an unmarried woman was, and still is, called a *spinster*.

Taking industry as a whole, the factory system developed rather slowly during the first one hundred years following its beginnings in modern form, but during the past fifty years it has been greatly extended and is now the most outstanding feature of our methods of work. The growing importance of the factory system in manufacture may be indicated by the fact that the total horse power used in manufacturing in the United States more than trebled between 1899 and 1923, during which time the number of wage earners in manufacturing increased by only 50 per cent. In other words, the horse power per wage earner in manufacturing plants doubled during this period.

The tendency toward an increase in the utilization of machinery is also shown by the statistics of the production of pig iron, for it is used almost exclusively in the manufacture of machinery. In 1800, the world's output was 825,000 tons. In 1850, 4,750,000 tons were produced, or six times the amount produced fifty years earlier. The total output in 1900 was 40,000,000 tons or almost nine times the quantity that was produced in 1850. In 1913 the amount was 78,000,000, which has been approximately the yearly output since that time.

Large Scale Production. — Another aspect of the machinery, or factory system, is large scale production in many lines of industry. The advantages of large scale operation vary greatly in different lines of work, as will be noted in the later chapters, and consequently, industries differ in the size of plants; but on the whole, large scale establishments characterize our industries.

The extent of large scale enterprise in manufacturing is indicated by the following table.

It is to be noted from this table that while only 5.6 per cent of the manufacturing establishments included in this study

TABLE 2

THE SIZE OF MANUFACTURING ESTABLISHMENTS IN 1925 [1]

Value of Products	*Establishments*		*Wage Earners*		*Products*	
	Number	*Per Cent of Total*	*Average Number*	*Per Cent of Total*	*Value*	*Per Cent of Total*
$5000 but less than $20,000..........	55,876	29.8	156,373	1.9	$ 628,373,403	1.0
$20,000 but less than $100,000.........	68,951	36.8	660,309	7.9	3,272,196,872	5.2
$100,000 but less than $1,000,000........	51,980	27.7	2,807,350	33.5	16,446,202,315	26.3
$1,000,000 and over	10,583	5.6	4,760,229	56.8	42,366,941,140	67.6
Total (firms producing goods valued at $5000 or more).	187,390	100.0	8,384,261	100.0	$62,713,713,730	100.0

produced, per establishment, goods having a total value of more than $1,000,000, yet such establishments employed 56.8 per cent of the wage earners employed by the total number of establishments enumerated, and turned out 67.6 per cent of the total value product manufactured by the establishments that were included in this study. The firms producing less than $5000 in value of products were not included in this census, but in 1919 the establishments producing goods valued at from $500 to $5000 were included in the census, and they contributed only 0.3 per cent to the total manufactured product in that year. Thus their exclusion in this study does not alter the significance of the data given.

The number of establishments producing goods of the value of $1,000,000 or more per year increased markedly from 1909 to 1923. In 1909 only 1.1 per cent of the manufacturing establishments were in this group and these employed 30.5 per cent of the total number of wage earners engaged in manufacturing. Their output made up 43.8 per cent of the total product according to value. The increase from 1909 to

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[1] United States Bureau of the Census, *Size of Establishments by Value of Products*, p. 5. These "establishments" are for the most part single plants or factories but in some cases they represent two or more plants that are operated by one company.

1925 in such establishments was in part due to the great change in the level of prices that took place during this time. The level of wholesale prices increased by 50 per cent during this period and thus with no change in the physical size of establishments, the number in the group producing goods valued at $1,000,000 would have increased due to the change in prices. But after allowing for price changes and also for the growth in the population of the country, the increase during these few years in the number of establishments with products valued at more than $1,000,000 per year is very marked.

A more significant comparison among plants to determine the trend toward large scale operation is made in table 3. This table gives significant data for establishments employing more than 1000 wage earners. It shows that in 1909 15.3 per cent of the total number of persons employed in manufacturing were engaged in establishments employing over 1000 employees; in 1921, 19.7 per cent of the wage earners were to be found in such establishments, and in 1923 this number had increased to 24.1. It is to be noted, however, that such establishments represent a very small proportion of the total number of manufacturing plants, 0.5 per cent in 1923. This will be referred to in a later section in this chapter dealing with the extent of small scale industry.

Transportation. — Another element of great significance, technically, is the modern transportation system. Large scale industry is, of course, dependent upon a wide market. If goods could not be sold in distant centers of population it would be impossible to localize their production. Further, the assembly of raw materials from distant regions is often a necessary feature in the manufacturing of goods on a large scale. The railroad has accordingly been a factor of great importance in building up the large scale factory system.

The marked efficiency of railway transportation is indicated by the fact that the average cost to our better railroads of moving freight is something less than two cents per ton per mile. This is incredibly low as compared with the cost of carrying freight in horse-drawn wagons. That the railway is of increasing

TABLE 3

MANUFACTURING PLANTS EMPLOYING MORE THAN 1000 WAGE EARNERS[1]

Year	*Establishments*		*Wage Earners*	
	Number	*Per Cent of Total*	*Average Number*	*Per Cent of Total*
1909	540	0.2	1,013,274	15.3
1921	645	0.3	1,367,640	19.7
1923[2]	971	0.5	2,113,829	24.1

[1] *Statistical Abstract of the United States*, 1913, p. 173; 1924, p. 724.

[2] Although establishments with a product valued at less than $5000 were not included in the 1923 census, there are perhaps few, if any, excluded that employed 1000 or more wage earners. In 1919 the establishments producing goods valued between $500 and $5000 employed only 0.6 per cent of the total wage earners in manufacturing. Comparable data for 1925 not available.

significance in our economic life is shown by the report that the revenue freight, the freight from which the railroads receive an income, amounted to less than 86 billion ton-miles per year during the period, 1891–1895; but for the period, 1923–1925, the average ton-miles of revenue freight per year was almost five times this much.

The automobile is also of great technical significance in respect to transportation, and thus in respect to the whole of our economic life. Its importance may be confidently expected to increase. The airship also plays a part in transportation, and the present indications are that it will increase steadily in importance.

Communication. — The conveyance of information concerning goods, prices, methods, and markets is of great significance. The agencies of transportation carry the mails and thus convey most of the business communications. In addition to this method of communication, the telegraph, telephone, and radio are vital parts of the system of communication and thus of the present industrial technique.

Standardization. — The factory system of production has led to a high degree of standardization in our work processes.

Materials have been carefully standardized as to quality in order that they may serve the purpose intended; measurements have been standardized in order that work may be done accurately from specifications; and the various parts of machines have been standardized in each factory as a fundamental part of large scale production. But although standardization has been highly developed it will undoubtedly be carried still farther. Measurements of quantity differ greatly among dealers, and in many fields products have not been standardized as to quality. In the case of many industries, the number of shapes and sizes of products is excessive. Within the past few years this subject has received much attention, and standardization has been considerably extended. This point will be discussed further in a later chapter.

Localization of Industry. — Another interesting feature of the large scale system of factory production is the gathering together of similar lines of industry in one locality. Thus Brockton, Massachusetts, is the center of shoe manufacturing; Akron, Ohio, of rubber; Troy, New York, of men's collars; Pittsburgh of iron and steel; and Chicago of meat packing. The factors that promote this feature of the factory system will be noted later.

The Survival of the Small Firm. — Large scale enterprise has not eliminated the small firm. Over 60 per cent of the manufacturing establishments in the United States in 1919 were manned by five persons or less. While these establishments employed only 3.4 per cent of the total number of wage earners in manufacturing, it is significant that so many small manufacturing establishments are in operation. The "small masters" have not been eliminated, and as will be pointed out in Chapter XIV, they may be expected to be a permanent part of the factory system.

The 1923 census of manufacturers, it may be noted, shows only 40 per cent of the establishments as employing five men or less, and only 2.4 per cent of the total number of wage earners in manufacturing as employed in such establishments. But this census excluded all establishments that had products valued at less than $5000, and thus does not give a good basis for comparing the small scale and the large scale establishments. The 1919 census included all establishments that reported a yearly product of $500 or more, and thus it affords a better comparison of the relation between large and small operation than does the later census. The following chart is compiled from the 1919 data.

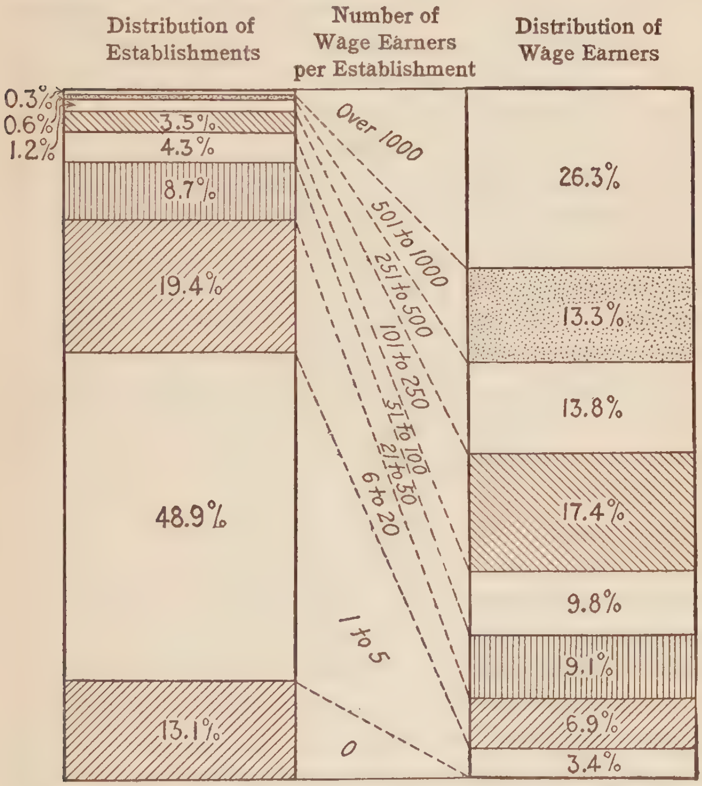

Chart I. Percentage Distribution of Establishments and Wage Earners in Manufacturing Industries, by Number of Wage Earners per Establishment, 1919.[1]

In the field of merchandising the small scale operator is also still with us, and in farming, which engages the services of 30 per cent of the country's working population, small scale operation is the overwhelmingly dominant type.

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[1] National Industrial Conference Board, *A Graphic Analysis of the Census of Manufactures*, 1923, p. 98.

Electricity. — A very significant technical development has taken place during the past few years in the field of electricity. The transmission of current has been greatly improved and the way has thus been opened for the production of electricity at water-power sites and at coal fields far removed from the places where the electricity is to be used. Further, the production process has been improved, thus augmenting the use of electricity by reducing the price that needs to be charged to those who use it. In 1919, for example, 3.2 pounds of coal or the equivalent in gas or oil were required in the production of one kilowatt hour, but in 1926 only 1.9 pounds were required. The total production of public utility plants in the United States increased during these seven years from approximately 39 billion kilowatt hours to 73 billion, a gain of nearly 100 per cent. Almost all of this increase was produced by plants that used fuel. The output from such plants doubled during this period, while the output from water-power plants increased but slightly. It is confidently predicted by many careful students that our industrial life will be considerably modified by the growing utilization of electricity.

Recent Developments in Technical Efficiency. — The increased efficiency which has just been noted as having taken place in the production and transmission of electric current has been equalled or exceeded in many lines of work during the past few years. The United States Census Bureau reports an increase in physical output during the first twenty-five years of this century for designated industries as follows: the chemical industry 366 per cent; paper and printing 318 per cent; iron and steel 204 per cent; tobacco products 169 per cent; food products 120 per cent; textiles 97 per cent; and leather 34 per cent.

The output of all of the manufacturing industries considered together is computed as having increased more than 178 per cent during this quarter century. The number of workers in manufacturing increased by almost 87 per cent during this time. Hence, the increase in physical output per worker during these twenty-five years, on the basis of these figures, was approximately 50 per cent. The average increase per worker in some lines was far more than this. In iron and steel work, the average output per worker is computed to have been two and one-half times as much at the end of this period as at the beginning. But in the boot and shoe industry the increase in output is estimated to have been only 6 per cent. The automobile and the rubber tire industries are credited with marked increases in efficiency during the latter part of this period. During 1926 and 1927 the physical output per worker is reported to have increased more rapidly than it did preceding 1925. The Federal Reserve Board reports a factory output for 1927 of 106 on a basis of 100 for 1923–1925, with a labor force of 94 on the same basis. During certain months of 1926 and 1927 the factory output is estimated to have been 25 per cent above that for 1922 although no more men were employed.

The railway industry experienced an even greater increase in efficiency during the twenty-five years ending in 1925 than did the manufacturing industries. Going back to 1890, and reckoning the number of traffic units handled per man-hour during that year as 100, the corresponding figure for 1899 is 121 and for 1925, 247.6.[1] In other words, the man-hour efficiency in our railroads increased by approximately two and one-half times from 1890 to 1925, and more than doubled during the period from 1899 to 1925. The output per worker in mining and agriculture is also estimated to have increased considerably during this twenty-five-year period.

Data, such as have been quoted above, are only approximations. But they have been worked out carefully, and may be taken to represent the general situation. The conclusion may be safely drawn that the degree of technical efficiency in production has been appreciably augmented during the past few decades. The increase in efficiency during the past one hundred and twenty-five years has, of course, been marked indeed. The machine has tremendously increased the power of man.

[1] United States Department of Labor, Bulletin No. 439, p. 556.

Relation of the Technical to the Coöperative Aspect. — There is a very close relationship between the technical nature of economic processes and the coöperative features of the economic society. The marked degree of coöperation that was noted in the preceding chapter depends very largely upon the technical methods that now prevail. As will be noted in the following chapter, the degree of interdependence, or coöperation, to use this term in its broad sense, has been growing for many centuries, but the technical developments of the recent decades have increased our interdependence far beyond what could earlier have been conceived as possible. Machine production, and its concomitant, modern transportation, have profoundly altered our life in this particular. Whole areas are now dependent upon other areas for the food necessary to maintain life, not to mention their dependence in the securing of the things that are now deemed to be necessary for a "decent" life.

Further, in the large scale enterprises, the many employees are dependent upon the managers for the opportunity to work. This means that the power to specify wages, hours, and other conditions of employment rests largely with the few employers. Partial ownership on the part of employees in most concerns in no way lessens the control of the managers. Indeed, it may strengthen it, as will be shown in Chapter XII, which deals with the organization and control of corporations. This condition, among others, has led many groups of laborers to form unions and to demand that the employers shall deal with the union, with the laborers as a group, rather than with individual laborers. In this way, the power of the laborer in bargaining with the employer is greatly increased.

Modern industry has also led to a great increase in the degree of political control over economic affairs. The employment of large numbers of persons who are not organized and thus unable to specify conditions of work that will insure safety and general well being; the production of goods for sale rather than for the use of the persons producing them; and the concentration of large sections of the population in cities, make necessary the regulation of conduct by the state to a degree that would not have been warranted under a system of household industry.

There are, indeed, perhaps no phases of life that are not affected by the machine technique of production that is such a conspicuous part of our modern life. Politics, religion, art, and literature all bear evidence of its influence. Even as fundamental an institution as the marriage relationship is believed by some persons to be in process of change because of the new conditions that prevail in the typical industrial city, which, of course, owes its existence to the machine process.

PROBLEMS AND EXERCISES

28. What percentage of the wage earners employed in manufacturing establishments in 1919 worked in places that employed more than 1000 persons? more than 250? 5 or less?

29. Name two ways in which the factory system has altered the coöperative aspects of our economic society.

30. Picture what would happen to our present economic society if all of its machinery were destroyed and if in addition all knowledge of the construction and operation of machinery were lost.

31. The movement of population from rural districts to urban centers is to-day being criticized in the United States. (*a*) What are some of the points that are made or that might be made to show the undesirability of this movement? Are they valid? (*b*) Under what possible conditions would this movement be checked?

32. Is there any relation between the development of the factory system and the growth of urban centers? Explain.

33. (*a*) Is the present-day economic development tending to make our society more or less of an "organism"? Explain. (*b*) Are individuals tending to become more or less interdependent in their economic activity? Explain.

34. Why do increases in the use of pig iron and coal signify growth of industry?

35. Will there be more or less standardization twenty-five years from now than to-day? Defend your opinion.

36. What effect has the development of transportation in the United States had upon the location of industries and upon agriculture? Illustrate. What effect has the automobile had?

37. Will the small firm be found in an H. G. Wells Utopia? Explain. The large firm? How large a firm?

REFERENCES

An able discussion of the subject matter of this chapter and of the implications of the change in production technique is to be found in R. G. Tugwell's, *Industry's Coming of Age*, 1927. Arthur Pound in *The Iron Man*, 1922, discusses the social significance of automatic machinery. See also the books listed in the appendix.

CHAPTER IV

ECONOMIC HISTORY

Any institution or system is both the fruit of the past and the seed of the future. Therefore, to understand the present, to know what it is and what it is likely to become, a knowledge of the past is important. Accordingly, with a view to assisting in a better understanding of the present economic system, a brief survey will be made of the economic history of the past one thousand years.

Coöperative and Technical Developments. — In describing the present economic system in the two preceding chapters, an analysis was made of its coöperative and technical aspects. Throughout economic history there has been a definite development in each of these phases of economic life. Coöperation has become more and more marked. That is, there has been an increasing degree of specialization — an increasing degree of economic interdependence. And in the technical side of man's work there has been, throughout the centuries, an increasing ability to utilize the forces and materials of nature.

The development of the first of these can be traced from the division of simple tasks between men and women to the present-day specialization and mutual dependence which is indicated both by the minuteness of tasks and by an immense volume of trade. This development in coöperation may be characterized as an increase in trade relations.

The development of the second of these phases of economic life extends from the appropriation of food and its use without cooking, up through various simple processes of agriculture, manufacture, and transportation to the present-day utilization of numberless forces and materials of nature in our countless mechanical appliances and industrial processes.

These two lines of development have been mutually dependent upon each other. Each has been a cause, and each an effect of the other. Growing trade relations have facilitated the improvement of industrial processes; and technical improvements in methods of work and in means of transportation have extended trade. The two lines of development may be epitomized in the term *expanding trade relations*, if it is remembered that improved mechanical processes have been an important factor in the expansion of trade relations.

The extension of trade relations can safely be said to be the most significant fact in economic history. It has not only greatly altered economic relations, but it has profoundly affected social and political affairs. It is this aspect of economic life to which attention must be especially directed in a survey of economic history.

Feudalism. — Feudalism is the name given to the system of social organization that prevailed in Europe and England during the Middle Ages. This historical sketch begins with feudalism, not because economic history begins here, for it began with the first known efforts of man to make a living, but because it is a significant method of economic organization and far enough in the past to serve as a starting point for this survey. As compared with the economic life of the ancient world, with its well-established towns and trade routes, the feudalism of Europe and England represents a very primitive culture. But as a stage in the development of the people of Europe and England it marks a great advance upward from the nomadic and barbaric life that preceded it.

The essential characteristic of feudalism was the grouping of people upon estates or manors, and their organization into an hierarchical system of political and economic life centering around a lord of the manor. The arrangements between the manorial lord and the different groups of persons bound to him, who with their families comprised all of the persons on an estate with the possible exception of a few freemen, became very elaborate as time went on, and took on the character of a complicated and rigid system. The duties and the privileges of these persons were definitely prescribed. The days of military service that were to be given to the lord each year, the number of days that were to be spent in working upon his land, the amount of land at the disposal of the various persons on the estate, the amount that was to be paid to the lord on the occasion of the marriage of his daughter, and rights against eviction by the lord, or other unfair treatment, to mention only a few of the subjects of manorial regulation, came to be very definitely stipulated and were carefully observed for a very long period of time.

Economically, the life of this time was extremely meager. A very primitive agriculture was almost the sole occupation. There was some manufacturing, to be sure, but this was confined almost entirely to simple articles of clothing. Each manor was, furthermore, practically self-sufficient economically. Originally, there was but very little trade, but finally trade relations were developed among the manors and between the manors and the outside world. The significance of this will be noted presently. Within the manor there was naturally some specialization but this was very limited.

From the coöperative aspect, the economic system was one in which there was but little individual freedom. There was some semblance of private property, particularly during the later years of the feudal system, as individuals came to own strips of land in the different fields of the manor and, occasionally, plows and oxen. But in the utilization of the land, all persons were definitely bound by the rules and regulations of the manor. The order of the rotation of the few crops that were raised, and the methods of farming were definitely prescribed.

The feudal system, although it undoubtedly seemed very securely established to the people who lived under it, was not destined to endure. Three significant changes were slowly taking place during the twelfth and thirteenth centuries. Law and order were being established throughout the country; the use of money was increasing; and trade relations were being extended and trading centers, or towns, established. Each of these conditions was in part cause and in part effect of the other two. Since the principal economic significance of the establishment of law and order, and the use of money, is in their relation to an extension of trade relations, the last-named change indicates the forces that were undermining feudalism.

The lords of the manor were not able to maintain the old relationships with the persons who were subservient to them, in the face of the new conditions. The growing towns offered economic opportunities in their trade and manufacture, and they also afforded an outlet for artistic talent and craftsmanship. To many people the towns thus gave the hope of a far richer life than was to be found on the manors. The old relation between bondman and lord had, consequently, to be given up. The lords bitterly resisted the change, as a group is likely to do when it feels its power slipping away, but the economic forces that were at work were inexorable. Feudalism, which had existed for some four or five centuries, became a thing of the past during the fourteenth century.

The Guild System. — The towns whose development was part cause and part effect of the disintegration of the feudal system were very important for some two hundred years following the middle of the fourteenth century. The establishment of a trade center by enterprising individuals soon led to the question as to whether the trading privileges were to be open to all or were to be restricted to those already in control. The answer which the traders made to this question was that they should retain a monopoly of the trading privileges. The fact that the trading privileges were often purchased from the king or from the lord of a neighboring manor gave justification for this practice in many cases, but even if this had not been the case in any instance, the monopolistic power of the early traders would undoubtedly have been established in so far as they were able to do so. This monopoly took the form of what was called a guild of merchants or a merchants' guild.

As manufacturing, which had long been under way, developed further, the monopolistic propensities of the manufacturers expressed themselves in the organization of craft guilds. This manufacturing was, of course, done with tools, that is, by hand,

and not with machines as to-day. Indeed, the derivation of the word *manufacture* from "to make by hand" indicates the early meaning of the word. Eventually there was a guild for practically every line of work. These guilds were of very great significance not only in the economic sphere, but also in the religious and social life of the time.

Technically, then, the guild period was one of handicraft manufacture with a considerable degree of specialization. But agriculture was by no means unimportant at this time. Indeed, agriculture is necessarily important at any stage of economic development. It is estimated that out of a population of less than five million in England at the close of the seventeenth century, over four and a quarter million were engaged in agriculture.[1] As this was some two hundred years after the guild system reached its most dominant position, there can be no question that numerically the guildsmen were never more than a small minority of the total population.

From the coöperative point of view, economic activity during the guild period was regulated rather than free. The institution of private property prevailed but manufacturers and traders were strictly limited in the use of their property. Buying and selling and manufacturing were all subject to minute regulations. But it must be clearly noted that these regulations did not issue from the political government, either national or local, but from the various groups of artisans, manufacturers, and traders. In manufacturing, for example, the various guilds specified the number of apprentices and the number of journeymen (the two grades of employees) that might be engaged by any one master. The terms of an apprentice and of a journeyman, as well as the duties of these employees, were also definitely specified; and the process of manufacture, and the hours and conditions under which work might be carried on were prescribed.

The guilds were dominant, roughly speaking, for two centuries, the fourteenth and fifteenth. But, as with the feudal system, the guilds had to give way; and it was the same general force that led to the decline of the feudal system and the establishment of the guilds that finally resulted in their disintegration. This force was, to repeat, the expansion of trade relations. Further, the same factors that encouraged specialization with its consequent trade expansion during the latter part of the feudal period, continued their development. Traders and their goods became increasingly safe from molestation and the use of money increased as the mines of America were exploited. The guilds, however, were essentially monopolistic and depended upon this condition for their power. Accordingly, as the competition of distant regions was made effective by growing trade relations, the guilds perished.

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[1] Gregory King's estimate given in J. A. Hobson's *The Evolution of Modern Capitalism*, 1904, p. 22. R. H. Tawney, *Religion and the Rise of Capitalism*, 1926, p. 26, gives similar data.

Mercantilism. — The development of law and order, which has been emphasized as an important factor in promoting an extension of trade relations, as well as being in part a result of trade extension, was manifested very largely in the growth of the power of national governments. The power of these governments increased considerably during the latter part of the guild period, and the national rulers became imbued with a desire to control economic activity with a view to strengthening their nations, and increasing their personal power. The decline of the guilds gave them an opportunity to do this. The period of time during which the national governments thus controlled economic activity in their respective territories is known as the period of mercantilism. Thus, the distinctive feature of mercantilism as compared with the guild system and the feudal system is found in the source of control of economic coöperation. Each of these three systems was marked by sharp restriction upon the freedom of individuals, but in each system the party or group exercising the control was different and consequently the type of control was different.

The policy of mercantilism may also be said, speaking broadly, to have prevailed for two centuries; namely, the sixteenth and the seventeenth. It reached its heyday in England during the reign of Elizabeth, which ended in 1603. Under the mercantilistic policy, as already stated, economic activity was sharply regulated by the political governments. But there was undoubtedly a greater degree of freedom during most of the period of mercantilism than during the time that the guilds were dominant. And, of course, with all of their restrictions, the guilds had offered a great increase in freedom over the bondage of the feudal system.

The government regulations during the mercantile period were very extensive. The statutes of Parliament specified in great detail the processes that were to be followed in the manufacture of most articles of commerce. Prices and wages were likewise subject to strict regulation. The navigation acts which proved to be so obnoxious to the American colonies were part of the regulatory legislation of this period. In the exercise of control over foreign trade, especial attention was given to the control of trade with a view to building up a fund of money metal within the nation. This feature of governmental policy was so conspicuous that the name *mercantilism* is often used to designate this practice alone, but this was really only one phase of the broader policy of government control to which the term is properly applicable.

Technically there was but little change in the method of work under mercantilism, but there was a considerable increase in the degree of specialization. One important aspect of this was the change which had taken place in the relation between the worker and his ownership of the product. Under the guild system, manufacturing had been carried on by the guild masters, together with their journeymen and apprentices, the master buying the raw material and disposing of the product to the consumers. But later the materials were purchased by a dealer and given out by him for manufacture in the various homes. This came to be known as the domestic system of manufacture and it was in this way that the principal manufacturing industry in England; namely, cloth manufacturing, was carried on. Under this arrangement the functions of the trader and the manufacturer became separated; and the workers were to an increasing degree not the owners of the product.

The Decline of Mercantilism. — Mercantilism, too, was doomed in its turn to give way to another form of economic organization. During the latter part of the seventeenth century and the early part of the eighteenth century, the opportunities for individual gain increased greatly as the increased security of traders and goods in transit and the development of banking institutions made the still further extension of trade relations profitable. Quite logically, individuals became very restive under the severe restrictions of the government, and out of this situation a philosophy of individualism developed in the latter half of the eighteenth century. This philosophy was very prominent in England, France, and America. The argument was advanced that a policy of individual freedom would promote economic welfare; or since the spirit of nationalism was strong and the restrictions enforced were based upon the idea of national strength, it was held that individual freedom would be conducive to national strength.

Adam Smith made a significant contribution to this philosophy, and at the same time established the science of economics. The title of his book, which was published in 1776, was *An Inquiry into the Nature and Causes of the Wealth of Nations.* He argued that if individuals were allowed to have economic freedom each would seek to serve his own economic interests and in doing so would at the same time most largely serve the interests of his fellows. Although this book was a general treatise on economics and was not by any means concerned exclusively with this point, and although Smith definitely noted the necessity of government regulation in certain situations, yet his argument in favor of "freedom" was so cogent that, in view of the interest in the subject, it was emphasized by his readers almost to the exclusion of the other material in the book.

This demand for less government interference was, so the story runs, expressed in France by a manufacturer impatiently declaring, "Laissez faire, laissez aller," in response to the request of a government official for information as to what additional service the government might render to manufacturers.

At any rate, the policy of "hands off" on the part of the government came to be known as the policy of *laissez faire.*

It must be noted, however, that the business men who advocated the policy of *laissez faire* were not anarchists. While they did not want the government to restrict them in the things which they wished to do, they were very anxious that the arm of the government should afford them protection against destruction of property and in the enforcement of contracts, and, as well, in the curbing of labor organizations, — to mention only a few instances of their desire for government interference in the field of economic relationships.

Period of *Laissez Faire.* — The policy of *laissez faire* in an extreme form was short lived. At the time when the philosophy of individualism was being developed, during the latter half of the eighteenth century, the inventive genius of man was being aroused, and, as a result, technical changes of great moment took place in industry. Perhaps both the individualistic philosophy and the awakening of inventive genius were due to the same underlying forces. The world had been considerably altered, so far as the people of England and Europe were concerned, during the preceding fifty or one hundred years. Not only were trade relations with Asia and Africa well established, but both North and South America had come to be important economic factors. The horizons of men had widened greatly, imagination had been quickened, and interest in science had been stimulated; new methods of work as well as a demand for freedom, for outlet, followed inevitably.

The industrial change which grew out of the new inventions may be summarized as a substitution of machinery for tools. This had its beginning in the cloth-making industry with the invention of the spinning jenny in 1767. This was rapidly followed by other inventions, and within a quarter of a century cloth making had been transformed into a machine process. These machines were at first driven principally by water power.

At the same time that the developments were being made in the cloth industry, noteworthy improvements were being made in the steam engine. This greatly facilitated the mining of coal and iron, and the development of power-driven machinery in all lines of manufacture. In short, these changes in technique resulted in the factory system, which was briefly described in the preceding chapter. This system of work has so altered not only the economic aspect, but indeed the entire pattern of life, that the change in technique upon which it is based is known as the *Industrial Revolution.*

The factory system gave a marked impetus to the doctrine of *laissez faire* but eventually compelled its modification. Business men found the new methods so lucrative that their impatience at government restriction was increased. But it was soon apparent to disinterested observers that individuals could not be left to shift for themselves in a régime of large scale industry. The philosophy of individualism, although admirably adapted to a system of small scale industry, was inapplicable to the factory system. In fact, the failure of the philosophy of individualism to promote the common welfare under the new conditions was so marked that the suffering and misery of the working classes in England during the first thirty years of the past century are commonly said to be without a parallel in industrial history. Although *laissez faire* was the dominant policy for the first half of the nineteenth century, inroads were made on it very early, albeit the restrictions imposed and their enforcement were not adequate to prevent the great distress among the laboring population which has just been indicated. As early as 1802 a factory act was passed in England. It provided that pauper children were not to be employed in cotton factories more than twelve hours per day, and that after 1804 they were not to work at night. These terms suggest that the conditions which the act sought to remedy were deplorable.

Legislative Control. — In subsequent years, the English Parliament imposed additional restrictions upon the employment of children, but it was not until 1844 that it attempted to safeguard the interests of women. Proposals looking to the enactment of protective legislation were always strongly opposed during this early period, both in England and America, on the basis of the philosophy of individualism, and, indeed, the doctrine of individualism has continued to be relied upon for argument against the encroachment of government authority. The growing degree of economic interdependence, however, has gradually forced the abandonment of this philosophy in its extreme form.

To-day, in the various political jurisdictions, there is a vast amount of legislation that limits the economic action of manufacturers, employers, employees, bankers, and promoters of business. Almost all of this legislation has been enacted in the face of the violent opposition of the particular group whose activity it was proposed to limit, but as these laws have been proposed bit by bit over a long period of years, the opposition in any instance has not included all of the persons who are opposed to "government interference" in business. For, though almost all persons in the influential groups have wished "freedom" for themselves, yet in the case of any one proposed regulation they have not acted together in opposition to it, because most of them were not only outside the scope of the proposed law, but were to be benefited by it as consumers or as citizens. That is, the opposition to governmental regulation in almost every instance has included only those who were to be adversely affected by the proposed regulation. And, in many cases, the opposition has included only a few of the persons whose activity was to be regulated, since the more far-sighted and liberal-minded members of the group had already adjusted their conduct to the standards that it was proposed to establish. Indeed, restrictive legislation is very often merely a means of compelling all of the persons within a group to abide by the standards which the more progressive individuals have proved to be feasible.

This present-day growth in political control is merely another result, in its time, of the extension of trade relations — of growing economic interdependence. How far this movement will proceed cannot, of course, be predicted, but the currents of life that are most evident to-day are making for a greater degree of specialization — of mutual dependence — not only within communities and nations, but throughout the world. It seems safe to predict that if this tendency toward increasing interdependence continues, there will accompany it not only a greater degree of political control over economic conduct within the different nations, but a continuously increasing measure of international regulation on the part of all the nations over the conduct of each other.

Trade Associations. — Within the past few years, as noted in an earlier chapter, there has been a marked disposition for the different business units in any one line of endeavor to form associations. The purpose of these associations is to assist all of the members in the solution of the problems that are common to the industry or line of work in question, and in most cases to set up rules of ethical conduct for the governance of those who are within the association. Such business groups will be more fully discussed in a later chapter. The present purpose is to note this form of infringement upon the policy of individualism, and to observe that there is a high degree of similarity between this modern type of business organization and the medieval guilds. Thus we not only have a partial return to mercantilism, as evidenced by government control in economic relationships, but also a revival of guild policy in the gathering together in associations of those who are engaged in a given line of enterprise.

A Changing World. — The preceding pages of this chapter show one of the most important facts of life, namely, that changes are ever taking place. As one moment succeeds another, new situations are brought into being. But each new situation is almost always so like the one that preceded it that their differences are not so marked as are their points of similarity. Even when a change is so marked as to be called a revolution, usually only one aspect of life is altered, the general pattern of social life remaining very much as it was before. Thus the men of any given period are usually not conscious of the significance of the changes that they observe. Prevailing institutions are accordingly thought to be everlasting. The men who lived during the centuries that have just been reviewed were perhaps never aware that changes of note were taking place. The men of the twelfth century, for example, undoubtedly knew that some changes were being effected within the feudal system, but that the entire system could disappear would have seemed to them to be impossible. They were unaware of the fundamental forces that were undermining the social and economic world as they knew it. A similar statement would undoubtedly be true of the men of each of the succeeding centuries, although with the extension of learning there has been an increasing appreciation of the inevitableness of change.

The fact that the social aspects of life are continuous, despite the changes that are ever taking place, makes it impossible to set dates that definitely mark the end of one period and the beginning of another. One epoch may grow into another over a period of time that is measured by centuries. Thus the dates of social history are only rough approximations of the time when particular features were dominant. They do not indicate that a given arrangement of social or economic life existed to the exclusion of other arrangements, during a specified period of time. Indeed, the gradualness of change — the continuity of life — makes inevitable the overlapping of different methods of conduct as one form of organization gives way to another.

The fact of change in economic life is sometimes phrased in a way to imply that the changes that are forever taking place are haphazard or disconnected. Such phrasing is unfortunate. Life is continuous. This is as fundamental a fact as is the fact of change. Thus one situation grows into another. But, it should be noted, any given condition is not necessarily "better" than the one that preceded it. The word *growth* is meant to imply continuity of change and not a *movement from* a lower to a higher form of life. In so far as men choose the things that are best, change does mean progress. This is perhaps the usual case, but men do not always choose wisely.

The fact of change is not limited to the field of social relationships. It is universal. The importance of this concept to students of social science warrants a reference to the physical realm by way of analogy. There can be no question that the physical structure of the earth has undergone vast changes in the time that has passed. High mountains of to-day were once beneath the ocean, and some of the present ocean beds were once dry land. And the climatic conditions of most parts of the globe, at least, have been markedly different from those which now prevail. The change from one of these climatic periods to another was perhaps for any one hundred, or even any one thousand years, imperceptible. That similar changes are now taking place cannot well be denied. Indeed, it is reasonable to believe that changes in the physical earth and in its climate as marked as those that occurred in any decade of the past have come about during the last ten years. Geological change cannot have ceased with the coming of this generation.

Social change is similar to geological change in that it is for the most part gradual and inevitable. What the future has in store for us and our descendants in the way of arrangements of economic relationships cannot be foretold, but that the prevailing institutions of the future will differ from those of to-day is as inevitable as is the dawning of new days. Social change cannot have ceased with the coming of this generation.

PROBLEMS AND EXERCISES

38. Account in a general way for the fact that the arrangements under which society makes its living change from time to time.

39. Argue that life under the manorial system was preferable in certain respects to life under the present economic system; that the guild system gave advantages as compared with the system of to-day.

40. The Industrial Revolution took place in Germany over half a century after it occurred in England. Of what advantage to Germany was this late adoption?

41. Have we anything in our economic system to-day that is mercantilistic? Explain.

42. Were the mechanical inventions at all responsible for the demand that government restrictions on industry should be withdrawn? Discuss. To what date does this question refer?

43. Argue that the policy of *laissez faire* was more justifiable before than after the Industrial Revolution. Did Adam Smith's advocacy of liberty precede or follow this revolution?

44. Which is the more antithetical to individualism, the medieval guild or the modern labor union? Defend your opinion.

45. Mention several conditions that have come to prevail today because of a growth in economic interdependence. Is there any relation between an increase in the volume of international trade and the formation of the League of Nations?

46. Should you expect that an increase in the amount of trade among the various states of our nation would tend to affect the distribution of power between the states and the national government? Why?

REFERENCES

A splendid general treatment of economic history is presented in *An Introduction to Economic History* by N. B. S. Gras, 1922. The classical treatment of mercantilism is the short essay by Gustav Schmoller, *The Mercantile System*, 1896, edited by Wm. Ashley. The economic history of the United States is well treated in W. W. Jennings, *A History of Economic Progress in the United States*, 1926.

CHAPTER V

THE INSTITUTIONAL CHARACTER OF OUR ECONOMIC SYSTEM

In further description of the general nature of our economic system, this chapter will be devoted to a discussion of the institutional character of our economic life. The economic system is institutional as is the family, the state, and the church. Each of these forms of social organization is based on fundamental aspects of life, and hence they are to some degree non-institutional. The sex urge and the desire for parenthood leads to some form of family relationship. Social, or group, life makes it necessary to have rules and regulations to govern conduct, and thus leads to some form of political organization. Similarly, most persons are religious and hence some form of church is instituted. Likewise, the physical need for food, clothing and shelter prompts men to engage in economic activity and to devise some form of social organization in respect to economic goods and economic activity.

Institutional Forms. — In each of these four aspects of social life there is thus a fundamental element, but in any society at any one time the form of social organization in respect to each of these fundamental elements is a social convention. In other words, the arrangement that prevails in respect to these phases of life is institutional — it is of social origin — it is a mechanism that has been devised, consciously or accidentally, for the serving of the general fundamental purpose, and it has become a habit of thought.

Family life may take the form of monogamy, polygamy or polyandry. In any case, the relationship is conventional or institutional. Indeed, the relationship is normally so highly conventionalized that it is regarded as *natural* and inevitable.

Religion may take any one of many varying forms of monotheism or polytheism. Further, the ritual in respect to religious observance may be very simple or it may be very elaborate. But whatever form the church has taken in any isolated social group, the children accept it as they do their mother's milk, and as they become philosophical with age they deem their particular form of religion to be as *natural* as is the feeding of a child. The state organization may be monarchical or democratic, to cite two possibilities, or predominantly one or the other, with an almost infinite degree of possible variations. Lastly, the economic organization may take any one of a vast variety of forms. To cite two alternatives which were indicated in Chapter II, the economic organization may be on an individualistic or a socialistic basis, or it may take the form of some degree of variation from the standard pattern, whether of individualism or socialism.

The social conventions relative to these four phases of social life are usually somewhat interdependent. That is, one form of economic organization may promote a particular form of political organization, of family organization, and of religious belief. Thus, as was suggested in the preceding chapter, any increase in the degree of economic interdependence among persons in an economic system that is based upon private property tends to lead to an increase in the degree of political control. All phases of life are interdependent. Life is a whole, composed of interdependent parts. But the fact that social organization in respect to one form of social life depends upon the organization in regard to other phases of social life does not mean that they are not both fundamentally institutional. Thus the organization of political life depends to some extent upon the economic life that prevails, but the economic life may be largely institutional. It may be largely a social habit of thought.

"Human Nature." — This analysis is at variance with a great deal of our ordinary thinking in respect to these matters. Most of us are inclined to regard the customs which we find about us as being fundamental in character. A familiar phrasing of this, as already noted, is that the customs which we find about us are in accordance with human nature. But, as was suggested in a previous chapter, the term "human nature" is normally only a synonym for that which is customary. An extreme phrasing of the case, in opposition to the traditional view, is that there isn't such a thing as human nature. Men and women are at birth a bundle of urges, but the forms that the urges take will depend upon the social customs that prevail. From early infancy children are conditioned by the life which they find about them. Attitudes, beliefs, and actions in regard to the family, the state, the church, or the economic system are accepted by the children from their elders much as they accept the language of the community. As John Dewey says, "Each person is born an infant, and every infant is subject from the first breath he draws and the first cry he utters to the attentions and demands of others. These others are not just persons in general with minds in general. They are beings with habits, and beings who upon the whole esteem the habits they have, if for no other reason than that, having them, their imagination is thereby limited. The nature of habit is to be assertive, insistent, self-perpetuating." [1]

A particular attitude in regard to the economic system is no more natural than is a speaking knowledge of the Choctaw language. Whether a child will speak the Choctaw language will depend upon whether he is reared among the Choctaw Indians. It is natural for a child to communicate, but the particular language form that he uses is not natural; it is conventional or institutional. Indeed, no language form above crude grunts, screams, and gestures is *natural*. Any word is institutional. As Cooley says, "A word is a vehicle, a boat floating down from the past, laden with the thought of men we never saw." [2] And it is largely out of the words that thus float down from the past that the child constructs the world in which he abides.

It is interesting in this connection, as suggested above, to note how highly conventional is the prevailing attitude in any community toward even such a basic relationship as that which takes form in the family. That a husband or a wife should object to infidelity on the part of the other is commonly regarded as a trait of human nature. But such an attitude is purely conventional, as is proved by the altogether opposite attitudes that have prevailed, and still prevail, in other social groups. A woman in some societies would regard it as the height of indecency if her husband had only one wife; and in some communities a husband would be outraged if his wife should refuse to accept his brothers and his male guests as her husbands.

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[1] *Human Nature and Conduct*, 1922, p. 58.

[2] C. H. Cooley, *Social Organization*, 1909, p. 69.

As a further illustration of the highly conventional aspect of the marriage relationship, attention may be called to the prevailing practice with us in regard to the name of the married couple. The usual woman does not hesitate at all to give up her surname at marriage and take the name of her husband. But almost any man would greatly resent the suggestion that he should drop his surname and assume that of his wife. These attitudes of men and women are commonly regarded as representative of human nature. A moment's reflection, however, leads to the conclusion that this is not the case. The attitudes are as purely conventional as are the attitudes that women should wear skirts and that men should wear trousers.

Our social forms are indeed for the most part merely habits of thought. There is some difficulty in appreciating this fact because the world is more and more coming to have only one set of conventions or customs in regard to each of the various phases of life. Transportation and communication are leading to a uniformity of social customs throughout the world. All social activity is more and more conforming to one standard. Hence, the lack of conflicting cultures makes it somewhat difficult to appreciate the simple fact that social conventions are bits of mechanism that have been evolved in the social process.

The Economic System Is Institutional. — The above illustrations in regard to the family, the church, and the state were given in order to emphasize the central thesis of this chapter; namely, that our economic system is very largely institutional.

in character. In other words, the position is that our economic system is largely conventional — that our economic conduct is to a marked degree a habit of thought. Private property is the essential characteristic of the system, as was developed in Chapter II. It is not inevitable, however, that the system of private property should prevail. Economic life might be organized on a socialist or communist basis. Whatever form the organization takes, may thus be described as a social convention.

Consider the aspect of economic life that is fundamental to the present economic system; namely, the attempt on the part of various individuals to maximize their economic interests. This is the dominant principle in our system. Men attempt to buy cheap and sell dear. The desire to enhance economic gain thus leads to the placement of men and goods in the economic system as developed in Chapter II. The usual person looks upon this situation and considers it to be in line with "human nature." Examination, however, shows that this attempt to maximize economic interests is very largely a social convention.

The extent to which acquisitiveness is taught to the children in our society is normally overlooked. Usually one of the first things that a child in our society learns is that he should look out for himself. He is taught to take good care of the small coins that come his way and to spend them so as to get the most for his money. He is taught further that he must not permit others to impose upon him, and around the family board he hears talk of money-making, of "getting on in the world," of "having more," and notes the warm approval of his mother if his father prospers and her sorrow if he fails. In the schools, the savings campaigns supplement the family teaching, and from both these sources of instruction, augmented by the church and the press, the child hears the men who are successful in business extolled as heroes who are to be emulated. Usually by the time a child is six or seven years of age the principle of acquisitiveness has been thoroughly inculcated in him. By that time he has been conditioned to the system of private property that prevails. Forgetful of this training which a child usually receives, naïve economists and naïve psychologists observe the economic conduct of men and talk of the "acquisitive instinct."

But there is, it seems, a fundamental possessive need in men. Dewey suggests that "me" cannot exist without "mine," but he stresses the "versatility of possessive activity." "My worldly goods, my good name, my friends, my honor and shame all depend upon a possessive tendency. The need for appropriation has had to be satisfied; but only a calloused imagination fancies that the institution of private property as it exists A. D. 1921 is the sole or the indispensable means of its realization. Every gallant life is an experiment in different ways of fulfilling it. It expends itself in predatory aggression, in forming friendships, in seeking fame, in literary creation, in scientific production. In the face of this elasticity, it requires an arrogant ignorance to take the existing complex system of stocks and bonds, of wills and inheritance, a system supported at every point by manifold legal and political arrangements, and treat it as the sole legitimate and baptized child of an instinct of appropriation. Sometimes, even now, a man most accentuates the fact of ownership when he gives something away; use, consumption, is the normal end of possession. We can achieve a state of things in which the proprietary impulse would get full satisfaction by holding goods as mine in just the degree in which they were visibly administered for a benefit in which a corporate community shared."[1]

Non-acquisitiveness. — The attitude of one who has been reared in a communistic society, such as the one at Amana, Iowa, which has existed for nearly three-quarters of a century, is in strange contrast to the attitude of the usual person in our modern capitalistic society. In Amana there is no private property. There is no use for the word "mine" in relation to economic goods. The child in that community is conditioned in a non-acquisitive manner so far as economic goods are concerned.

Another illustration of an attitude toward economic goods that is at variance with that which prevails among us is given by Thoreau in a discussion of his desire not to be burdened by the possession of economic goods. He also relates a story of certain North American Indians who from time to time burned almost all of the goods which they possessed.[1] The fact that this seems so irrational to us only indicates that attitudes in regard to economic goods may be sharply at variance with those which prevail among us.

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[1] *Ibid.*, p. 117.

Another illustration of the non-acquisitive attitude toward economic goods is found among the early Christians. This was a dominant note in the teachings of Jesus, as exemplified in his injunction "Lay not up for yourselves treasures upon earth, where moth and rust doth corrupt, and where thieves break through and steal; but lay up for yourselves treasures in heaven; where neither moth nor rust doth corrupt, and where thieves do not break through nor steal." An expression of a similar attitude on the part of St. Paul will be indicated later in this chapter.

Religion and Capitalism. — The conventional or institutional character of the economic system may be further indicated by reference to the changing attitude toward economic activity which took place among the leaders in the Christian Church during the latter part of the sixteenth century. The attitude which then came to prevail has profoundly modified the economic system since that time. During the first several centuries of the Christian Church, there developed a great deal of commercialism. The acquisitive attitude was highly marked in many quarters. But success in business was frowned upon by the Church. One could not serve both God and mammon. In order to cleave to one he must forsake the other. One oft-quoted illustration of this attitude is that of the position of the church on the question of the taking of interest, or usury. Christians were forbidden this form of money-making. To charge interest meant that one was liable to excommunication by the Pope, and might be refused burial in a Christian cemetery. In general during the first fifteen centuries of the existence of the Christian Church, commercialism in Europe did not have the blessings of organized religion. The whole-hearted pursuit of economic gain by the righteous was thus impossible. It was only the relatively few persons who did not feel dependent upon the Church who were free to pursue zealously their economic advantage.

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[1] *Walden*, ch. "Economy."

In the middle of the sixteenth century the able religious leader, John Calvin, sounded a new note. He approved of the taking of interest, and encouraged his parishioners in their endeavors to make money. Calvin's philosophy in regard to economic activity reached its fruition under the Puritans. They made the economic virtues under the system of private property into religious virtues. It was emphasized that men must work hard. There was to be no self-indulgence, no loafing, no dancing, and no card playing. Service to God came to be synonymous with unremitting toil and the accumulation of property. Business success came to be practically a sign of spiritual grace. Rather than the idea, "Whom the Lord loveth, he chasteneth," the Puritan philosophy became, "Whom the Lord loveth, he prospereth."

This change in the attitude of Christian men toward economic activity is splendidly set forth by Professor Tawney in his book, *Religion and the Rise of Capitalism*.[1] We cannot do better than quote extensively from Tawney in regard to this matter:

> "In their emphasis on the moral duty of untiring activity, on work as an end in itself, on the evils of luxury and extravagance, on foresight and thrift, on moderation and self-discipline and rational calculation, they had created an ideal of Christian conduct, which canonized as an ethical principle the efficiency which economic theorists were preaching as a specific for social disorders. It was as captivating as it was novel. To countless generations of religious thinkers, the fundamental maxim of Christian social ethics had seemed to be expressed in the words of St. Paul to Timothy: 'Having food and raiment, let us be therewith content. For the love of money is the root of all evil.' Now, while, as always, the world battered at the gate, a new standard was raised within the citadel by its own defenders. The garrison had discovered that the invading host of economic appetites was, not an enemy, but an ally. Not sufficiency to the needs of daily life, but limitless increase and expansion, became the goal of the Christian's efforts. Not consumption, on which the eyes of earlier sages had been turned, but production be-

[1] Published in 1926.

came the pivot of his argument. Not an easy-going and open-handed charity, but a systematic and methodical accumulation, won the meed of praise that belongs to the good and faithful servant. The shrewd, calculating commercialism which tries all human relations by pecuniary standards, the acquisitiveness which cannot rest while there are competitors to be conquered or profits to be won, the love of social power and hunger for economic gain — these irrepressible appetites had evoked from time immemorial the warnings and denunciations of saints and sages. Plunged in the cleansing waters of later Puritanism, the qualities which less enlightened ages had denounced as social vices emerged as economic virtues. They emerged as moral virtues as well. For the world exists not to be enjoyed, but to be conquered. Only its conqueror deserves the name of Christian. For such a philosophy, the question, 'What shall it profit a man?' carries no sting. In winning the world, he wins the salvation of his own soul as well.

"The idea of economic progress as an end to be consciously sought, while ever receding, had been unfamiliar to most earlier generations of Englishmen, in which the theme of moralists had been the danger of unbridled cupidity, and the main aim of public policy had been the stability of traditional relationships. It found a new sanction in the identification of labour and enterprise with the service of God. The magnificent energy which changed in a century the face of material civilization was to draw nourishment from that temper. The worship of production and ever greater production — the slavish drudgery of the millionaire and his unhappy servants — was to be hallowed by the precepts of the same compelling creed."[1]

"Such teaching," continues Tawney, "fell upon willing ears, in the period following the Restoration of the Stuarts in 1660. The Dissenters who were hearing these doctrines preached had been excluded by legislation from a direct participation in public affairs. Now with the blessings of religion upon economic conduct they threw themselves whole-heartedly into business affairs."

"To such a generation, a creed which transformed the acquisition of wealth from a drudgery or a temptation into a moral duty was the milk of lions. It was not that religion was expelled from practical life, but that religion itself gave it a foundation of granite. . . . The good Christian was not wholly dissimilar from the economic man."[2]

It may be argued that Calvinism and Puritanism grew out of the developing economic activity of their time. There is undoubtedly merit in this contention. But the causal relationship did not run exclusively in this direction. Religion and religious leaders bulk so large even in our life to-day that we cannot but conclude that the teaching under consideration had a marked effect on conduct. If the church — if all branches of the church — had continued to emphasize the "other worldliness" of the early Christians, economic development would undoubtedly have gone on without it, but it would not have gone on as rapidly as it did. If the sanction of religion had not been given to economic enterprise, the hold of the church over large numbers of persons could not but have retarded economic development. Calvinism and Puritanism must be reckoned as important factors in promoting the economic development of the seventeenth century, which in a hundred years grew into the Industrial Revolution.

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[1] Pp. 248, 249.

[2] P. 253.

This religious attitude toward economic life became the dominant one in America. From the beginning of our country the pursuit of economic gain had the approval of religious leaders. This has unquestionably contributed greatly to the economic prosperity of our country. Men threw themselves whole-heartedly into the economic struggle confident of the approval not only of the general public but of saintly religious leaders as well. But if from all the pulpits men had been besought under penalty of hell-fire to "take no thought for the morrow," to "lay not up treasures on earth," to "keep unspotted from the world," it is inconceivable that the tempo of economic life would have been as rapid as it has been during these past two centuries. The number of parishioners would have been fewer under such preaching, but by no means would all persons have forsworn the blessings of religion in order to make money.[1]

Persons Who Are Non-acquisitive. — The fact that the approval of the church has been a factor in the economic success of the American people is confirmatory of the thesis that our attitude toward economic endeavor is largely a traditional one. But it must not be assumed that all persons, even in America, are absorbed in the desire to make money. Dewey says in reference to this, "From the standpoint of orthodox economic theory, the most surprising thing about modern industry is the small number of persons who have any effective interest in the acquisition of wealth. This disregard for acquisition makes it easier for a few who do want to have things their own way, and who monopolize what is amassed. If an acquisitive impulse were only more evenly developed, more of a real fact, than it is, it is quite possible that things would be better than they are."[1]

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[1] For another development of this point see, R. Neibuhr, "Puritanism and Prosperity," *Atlantic Monthly*, June 1926, Vol. 137, p. 721.

Some confirmation of this point can be had by noticing the large number of able-bodied men who are on the business streets of a city during the normal working hours. Undoubtedly, some of these men are working, and some have not been able to find work, but it is very reasonable to believe that many of them do not wish to work. They have been working, perhaps, and have a few dollars ahead, and choose to loaf until this money is gone. Such persons may take good care of their money, when they have any, and make it go as far as it will, but still not be anxious to accumulate property. The lack of universality in economic acquisitiveness with all of our teaching to this effect, suggests that if it were not for this teaching this trait would be far less common than it is to-day.

Question as to the Desirability of Prevailing Attitudes. — It should be noted perhaps that there has been no attempt in the preceding paragraphs to express a judgment as to whether the prevailing attitude toward economic endeavor, or toward other forms of social behavior, is good or bad. The point at issue has been the institutional character of the economic system. We may assume that our system of private property, which is based upon individual acquisitiveness, contributes more fully than would any other system to the realization of a good life. But even so, the position would still be sound that this method of economic activity — this way of looking at economic life — is very largely a social convention. It is not inherent in men; it is not an index to human nature; it is largely a habit of thought. It is based upon fundamental human needs for certain economic goods, but in its social organization it has become concerned with far more than this.

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[1] *Ibid.*, p. 144.

Pecuniary Values To-day. — To note further the institutional character of our economic life, attention should be called to the conventional character of the valuations that are placed upon our economic goods. These valuations are very largely institutional. That is, our economic wants are very largely social — they depend for their particular form upon the social customs that prevail. One illustration of this, as given by Professor Cooley, is found in the matter of funerals. There are certain social codes in regard to funerals that have great power to influence conduct, and that lead to the carrying of a great deal of insurance among the poorer people merely in order that burial may take place according to the established code.[1] Houses, furnishings, and automobiles serve fundamental physical needs to some extent, but they also have in them a large element of that which is purely conventional. Certain persons follow certain practices in regard to these economic goods, and others then wish to emulate them. If it were not for the important wish "to be seen of men," our demand for these things would be very different from what it is now.

The demand for clothing is highly conventional. Nakedness is in no way contrary to human nature. Social convention not only demands that people shall wear clothes, but rigorously determines the particular forms of clothing that shall be worn. Changes in style sharply illustrate the conventional aspects of the demand for clothes.

Another illustration of the conventional aspect of our desires for economic goods is found in reference to servants. As Veblen says in his book, *The Theory of the Leisure Class*, "The first requisite of a good servant is that he should conspicuously know his place. It is not enough that he knows how to effect certain desired mechanical results; he must, above all, know how to effect these results in due form. Domestic service might be said to be a spiritual rather than a mechanical function." In the terms which have been used here, the demands for the services of a servant are largely conventional.

A striking illustration of the social attitude in respect to such matters is given by Veblen in the book referred to. "We are told," he says, "of certain Polynesian chiefs, who, under the stress of good form, preferred to starve rather than to carry their food to their mouths with their own hands." He also records the case of a certain king of France who is said to have lost his life as a result of a refusal on his part to move the chair in which he was sitting away from the fire. "In the absence of the functionary whose office it was to shift his master's seat, the king sat uncomplaining before the fire and suffered his royal person to be toasted beyond recovery. But in so doing he saved his Most Christian Majesty from menial contamination."[1]

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[1] *Social Process*, 1922, p. 294.

These are extreme illustrations of the length to which social conventions may be carried in respect to economic conduct. But many less extreme cases might be cited to show that our demands for economic goods are largely determined by what is considered to be good form. The kind of food that is served, the manner of its serving, and the furnishings of the table are all eloquent of social customs.

To quote again from Cooley:

> "The market (meaning by this the system of pecuniary transactions regarded as one organic whole) is as much an institution as the state or the church, which indeed it somewhat overshadows in modern life. I mean that it is a vast and complicated social system, rooted in the past, though grown enormously in recent times, wielding incalculable prestige, and, though manned by individuals like other institutions, by no means to be understood from a merely individual point of view. It would be as reasonable to attempt to explain the theology of St. Thomas Aquinas, or the Institutes of Calvin, by the immediate working of religious instinct as to explain the market values of the present time by the immediate working of natural wants."[2]
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> ". . . the pecuniary values of today derive from the whole past of the pecuniary system, so that all the wrongs that may have worked themselves into that system are implicit in them. If a materialized ruling class is in the saddle, this fact will be expressed in the large incomes of this class and their control not only of the mechanism of the market but, through prestige, of the demand which underlies its values. If drink, child labor, prostitution, and corrupt politics are part of the

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[1] These references are taken from Chapter III.

[2] *Social Process*, 1922, p. 296.

institution, they will be demanded upon the market as urgently as anything else."[1]

Man Is Social. — All of the preceding discussion may be summed up in the simple statement that man is a social being. The life which he lives is social — his attitudes are social — the arrangements in regard to economic goods are social. Neither economic conduct, nor any other phase of social life, can be explained except on the basis of this simple fact. The springs within an individual are fundamental, but the social customs, habits, mores, are no less fundamental in making him what he is.

PROBLEMS AND EXERCISES

47. Name several institutions other than those named in this chapter. Why do you call these institutions?

48. Try briefly to account for the origin of the monogamous family, the Christian Church, the state, and private property. Do they not seem to have been established by divine fiat in order to facilitate human progress? Defend your answer carefully.

49. "You can't change human nature. All men are born lazy. Therefore only the goal of the lure of profit will keep them at work."

(*a*) Is this statement correct or not? Answer carefully.

(*b*) Cite a case if you can, to support each point you have made in (*a*).

50. "A word is . . . a boat floating down from the past, laden with the thought of men we never saw." Cooley.

(*a*) What does Cooley mean by this statement?

(*b*) Argue that it is just for this reason that words become meaningless and that men, therefore, need to use as substitutes new words developed in our modern social and economic system.

(*c*) Argue that an institution is analogous to a word.

51. "Men tend to buy cheap and sell dear."

(*a*) Discuss carefully whether this is a natural instinct or an acquired form of social thought.

(*b*) Does it follow from this that the profit motive is the dominant one? Illustrate your answer.

52. (*a*) Did the Christian Church come to sanction usury and commercial business because of a change in that which religion emphasized, or did this merely mean a necessary compromise by the Church? (*b*) Argue that the Church would have been greatly reduced in membership had religion not come to sanction trade and interest taking. (*c*) If the conclusion in (*b*) is sound, does this mean that economic interests are more fundamental in influencing conduct than is religion, in the case of some men? Of all men?

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[1] *Ibid.*, p. 315.

53. (*a*) Do you suppose that the attitude of the American church leaders toward business success has been of major or of minor importance in promoting economic prosperity? Discuss. (*b*) The aristocracy of the old South looked down upon trade. Do you suppose that this was due to the fact that the South was settled largely by Episcopalians rather than by Puritans?

54. (*a*) Name ten goods whose value is solely institutional. (*b*) Can you name three goods whose value is not institutional? Discuss.

55. (*a*) What is meant by a social habit of thought? Illustrate. (*b*) Why did St. Paul think that the love of money is the root of all evil, whereas men to-day often think it to be the source of all good? Develop your answer in terms of social habit.

56. "Americans value hard work because their immediate ancestors had such difficulty in extracting the means of life from the hard New England soil."

(*a*) Develop an argument in favor of this statement. (*b*) How does this explanation of the genesis of the American attitude toward hard work compare with one attributing it to the early Puritan religious outlook?

57. Assume that during the past seventy-five years selfishness and laying up of goods for mundane consumption had been consistently condemned. Contrast the social habit that would have prevailed with the one now in vogue.

REFERENCES

The books and the article referred to in the footnotes may be read with profit in connection with this chapter. See also C. H. Judd, *The Psychology of Social Institutions*, 1927.

PART II

SOME FUNDAMENTAL ELEMENTS IN ECONOMIC LIFE

CHAPTER VI

LABOR

In the production of economic goods, the people and the natural resources are, obviously, of fundamental importance. The first of these will be discussed in this chapter, and the second in the following chapter.

Labor Defined. — The word *labor*, like so many words in economics, has more than one meaning. While it is, of course, unfortunate that the number of ideas exceeds the number of terms available to express them, there is less confusion of thought from the use of words in two or more senses than one might expect to find. In most cases, the difference is merely that one meaning is more inclusive than another; and, further, the context usually shows which meaning is intended. This is true of the word *labor*. In its broader, or more inclusive, meaning it refers to all human exertion that is devoted to economic ends. Thus bank presidents, physicians, and actors *labor* as well as do coal miners and ditch diggers. But in its narrower sense, the term applies only to the last two of these five groups of persons, that is, to the human activity which is primarily physical. It is in this latter sense that the word is commonly used. But it is in the broad sense that it is used as the subject of this chapter, and in most discussions in the field of economics.

I. PERSONAL QUALITIES OF ECONOMIC SIGNIFICANCE

Physical strength, intelligence, knowledge, dependability, ambition, imagination, judgment, courage, perseverance, and the ability to coöperate with one's fellows, make for the economic success of a people.

Physical Strength. — Physical strength is, of course, of primary importance. A nation of weaklings cannot achieve a high degree of economic welfare. How to conserve and promote physical well-being is thus a question of considerable moment, and one of many ramifications. The prevention of disease and accidents, the care and rehabilitation of the unfortunate, and the elimination of poverty are all phases of this problem, but it is not possible to discuss these matters at this place.

The examinations for military service during the World War revealed some alarming facts regarding the physical fitness of the men of our nation. According to a report of the Provost-Marshal General, only 65 per cent of the men between the ages of twenty-one and thirty-one were found fully qualified for military service out of over three million men examined between December, 1917, and September, 1918.[1]

The relation between the lack of physical strength and economic inefficiency is one of mutual cause and effect when physical weakness is a result of insufficient food, clothing, or rest. For, then, lack of strength makes the individual inefficient and his inefficiency does not permit him to earn enough to overcome his physical weakness. But since individual employers have no guarantee as to how long particular employees may remain in their employ, the policy of increasing efficiency by paying wages above present earnings may seem inadvisable to them, particularly if a considerable period of time may have to elapse before an increase in wages might be expected to result in increased efficiency. Such a conclusion, however, may be contrary to their best interests. Further, the general welfare may perhaps be best served by providing by law that all employers shall pay at least a certain minimum wage. The question of the advisability of such legislation will be considered in a later chapter.

Knowledge. — The importance of intelligence and knowledge cannot be exaggerated in noting the qualities that contribute to economic well-being, for without these, man is inferior to most of the brutes. Perhaps there has been no change in the native intelligence of men throughout the historical period, but in the knowledge which men have had during the successive divisions of this period of time the change has been most significant. By means of each generation becoming successively heir to the experience of the ones that have preceded it, a body of knowledge has been accumulated through the ages which has made it possible to utilize the forces and materials of nature in a progressively efficient manner. The growth in such knowledge during the past seventy years has been especially marked.

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[1] S. H. Patterson and K. W. H. Scholz, *Economic Problems of Modern Life*, 1927, p. 472.

Knowledge which is of economic importance is, however, not limited to that concerning mechanical and physical processes. Knowledge of how to carry on trade, organize business associations, operate a monetary system, and secure the active coöperation of different industrial groups is of outstanding importance. Further, the knowledge which results from ordinary grade school activity, although it may seem to be unrelated to industrial knowledge, is a vital element in the ability of a people to carry on their economic activity in a capable and efficient manner.

The people of the United States have been particularly fortunate in the liberal policy of encouraging education which has marked their history. To-day, in almost every state of the Union children are not only offered the privilege of twelve or more years of schooling, but they are compelled to acquire the rudiments of an education as a civic duty.

The fear is sometimes expressed by some persons that because of universal education it may become impossible for us to care for our more elementary needs. Since the educated people to-day do not go into the manual trades, then, if all were educated, so the argument runs, there would be no one left to do the physical tasks such as digging, mining, and operating machinery. But such fears are groundless. It is inconceivable that the people of a nation would, because of their higher education, freeze to death in winter rather than mine coal. The more highly educated people work at mental rather than at physical tasks, principally because brains are scarce relatively to muscle. For, as a result of the scarcity of mental ability, wages and social esteem make the one class of occupations more attractive than the other.

If, however, to make a bold assumption, everyone were well educated, muscle might be scarce relatively to brains and the pull of wages and social approval would, under such conditions, be in the direction of physical rather then mental work. In other words, as the number of persons trained to do the "soft-handed" tasks increases relatively to the number of persons who can do only the "horny-handed" tasks, the rate of wages will tend to fall in the one group and to rise in the other, and also, those who belong in the latter group will rise somewhat in social esteem as compared with those in the former group. It is thus that a balance will be held between the two classes of work as the opportunities for education increase. This, also, may operate to some extent to discourage the pursuit of an education and hence reduce the number of persons in the educated group as compared with what it would otherwise be.

To be sure, the attractiveness of the problems in some lines of work will keep many educated persons in such fields, but such a consideration would not so outweigh the pull of wages and social approval that sufficient workers could not be secured for the more unpleasant tasks, under the assumption suggested above. Then, too, it should be noted that the extension of education results in the elimination of some of the more disagreeable aspects of work through the invention and utilization of machinery. This further detracts from the validity of the point that universal education is disadvantageous to social welfare.

Dependability. — It is also very important that the people of a nation have a marked degree of what may be called dependability if they are to have a high degree of economic welfare. Three elements that make for dependability will be noted; namely, regularity in work, honesty, and sobriety. These aspects of conduct are not entirely distinct from each other, but they are sufficiently so to warrant the classification.

The disposition "to be on the job" — to be prompt and regular in the performance of tasks — is certainly of great importance in determining the volume of goods that a group of people will produce. If street cars and trains did not run regularly; if factory managers, bankers, and merchants opened their places of business only as the whim to do so happened to strike them; and if employees were indifferent as to when they reported for work or whether they reported at all, it would clearly be impossible for us to have our present output of goods.

Honesty contributes to the economic success of a society by making possible the feeling of mutual trust which is essential to the encouragement of the production of goods and to the coöperation of men in their economic relationships. Lack of honesty curtails economic activity in part by limiting the development of interdependent relationships and by discouraging activity on the part of honest persons. If the fruits of honest toil are not safe from thieves, the incentive to industry is largely removed. Dishonesty in a community further reduces economic welfare by making it necessary for certain persons to turn away from the lines of work that they would otherwise follow and spend their time as policemen, jailers, prison officials, criminal lawyers, or as producers of guns, clubs, and prisons. And, in addition, the lack of production of goods by the thieves themselves curtails the total output of goods.

The old adage, "There is honor among thieves," testifies to the necessity for individual dependability in this particular if a group is to work together successfully. Without some degree of honesty it is almost inconceivable that a society could survive at all, and surely it could not reach any appreciable degree of economic welfare.

It is interesting to note in this connection that the student body of a university could be served far more effectively than is normally possible if students were unfailingly honest in the presentation of work for which they wish to receive credit and in the use of libraries and laboratories. The thieves that infest such a community are a ball and chain on the foot of educational enterprise, even as their brethren are an impediment to economic well-being in the nation as a whole.

Obviously, sobriety is also a factor in determining the possible output of economic goods in a community. A nation of drunken men and women would surely perish. It is interesting to note in this connection that as a society becomes increasingly efficient in its economic activities, the effect of insobriety in curtailing well-being becomes more and more marked. The steam engine, the electric dynamo, and the automobile, with all that they mean in the way of power machinery, large scale enterprise, and the congestion of population, have made men so dependent upon each other that sobriety is essential to the safeguarding of life and property. Undoubtedly, the fundamental explanation of the reason for the present-day attempts to prohibit the manufacture and sale of intoxicating liquor is found in the modern economic arrangements.

Ambition. — Ambition is another personal quality that is important in economic life. A very vital consideration in respect to ambition is the opportunity "to get on," for only as success is possible will ambition be developed and maintained. We in America have been very fortunate in this particular. We have had very fertile natural resources and our economic institutions and social ideals have acted as powerful stimuli to enterprise. The institution of private property has greatly stimulated individual activity, and the relative absence of class barriers has given a scope to talent which has not prevailed in the older and more aristocratic countries. In the United States, says Professor Taussig, the low-born person's opportunities to rise "have been more free than ever before in any part of the world, and to this factor, above all others, is due the wonderful material prosperity of the country."[1]

Our society is, however, far from perfect in respect to the conditions that foster ambition. There are countless cases of frustrated hopes that have resulted in lethargy. The persons who are the victims of unfair competitors, unscrupulous employers, or rogues of any kind tend to lose interest in their work. Further, favoritism and nepotism in business concerns tend to dull ambition. If the impression comes to prevail in an organization that effort will not be rewarded — that the choice positions will be given to favorites or relatives of the management — the zeal of employees will necessarily flag. The wise employer studiously plans to avoid thwarting the ambition of those who are working for him. Indeed, one of his chief concerns is to stimulate the ambition of his employees through improving their positions. Broadly speaking, whatever may be called injustice tends to act as a check upon economic effort.

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[1] F. W. Taussig, *Principles of Economics*, 3d ed., 1924, Vol. I, p. 102.

Leadership. — The other personal qualities that were listed above, namely imagination, judgment, courage, perseverance, and coöperativeness, do not call for comment. Obviously, the possession of these qualities contributes markedly to the economic success of a people. But, however widespread these qualities are, the individuals who possess them in the most marked degree become the industrial leaders, and those persons in whom these qualities are very pronounced become the so-called captains of industry. In fact, these qualities promote leadership in every field of endeavor.

For the most part, the industrial leader rises to the position of leadership, and maintains his position, by rendering an important service to the society. His work, generally, consists in organizing economic forces to produce efficiently a product which contributes to the general welfare. He may, however, win his position by having, along with the estimable qualities enumerated, a spirit of ruthlessness which prompts him to take unfair advantage of competitors, employees, and persons with whom he deals. Further, he may succeed in certain cases by restricting, instead of increasing, the supply of enonomic goods. Patents may be purchased from inventors not for the purpose of using the new processes, but for the purpose of preventing their being used; and monopolies may be organized for the purpose of reducing output and increasing the price of the product. Then, too, industrial leadership may be secured merely by coming into the possession of wealth through inheritance. Also, the fortunate acquisition of natural resources has often been the means of acquiring economic leadership without paying a price in social service.

But, despite their occasional shortcomings, and the accident of position, the directors of the economic enterprises of a country are the most important single group in promoting the general economic welfare. It is through their ability to see opportunities, to plan, organize, and direct enterprises, and through their courage to go ahead, that prosperity comes. And it is largely through their failure that economic distress appears. Labor troubles, for example, though not by any means always an evidence of failure on the part of industrial leaders in their personnel policies, are usually so. Such failure in leadership often comes from the inability or unwillingness to adjust policies of management to the new attitudes of employees which have come about because of general social progress.

The development of capable industrial leadership is one of the important functions of a modern state. It is as agencies in the performance of this task that colleges of commerce have their principal claim to state support.

II. PLEASURE AND IRKSOMENESS IN LABOR

Pleasure in Work. — The performance of labor is not necessarily irksome. It may be decidedly pleasant. The so-called higher forms of activity especially afford a great deal of pleasure to those who engage in them. Most artists, musicians, actors, writers, those engaged in the professions, and executives of enterprises undoubtedly enjoy the work that they do, entirely aside from the fact that it is a means of securing an income. Further, many persons who are employed at the more humdrum tasks no doubt derive pleasure in doing their work. Indeed, the desire which the normal individual has for purposeful activity makes it inevitable that many persons enjoy their workaday tasks, although some may so pine for other forms of activity that their work always amounts to boredom.

In the case of most persons there is also, doubtlessly, a sufficient degree of mental adjustment to the task at hand to eliminate much of the irksomeness that might otherwise be present. Indeed, the fact of mental adjustment to one's condition is one of the most significant aspects of life. Since it is only thus that existence becomes tolerable, all of the ongoing forces of life tend to compel such an adjustment. A feeling of dissatisfaction is so enervating that it is physiologically necessary that a person be moderately happy in his work. It is because of this fact that so many persons plod along at tasks, and under conditions, that seem to those in other groups to be intolerable.

Even the dissatisfaction which an ambitious person may have in a given position is usually tempered with a feeling of satisfaction that so much has been accomplished — that he has done well thus far in attaining his present position. And even when further improvement seems to be impossible, the feeling is normally induced that sufficient success has already been achieved. It is thus that courage is maintained from day to day. In short, biological or physiological forces tend to prevent the work of men from being as irksome as one might expect much of it to be.

There can be no question that the economic conditions of a people are the more satisfactory as they regard the work which is done as being in itself pleasurable. For this means that the work itself, as well as the goods which are to be secured as a result of the work, contributes to the enrichment of life. This is all the more true because work which is pleasurable not only gives enjoyment at the moment but in many cases, at least, contributes to the growth of the ability and versatility of the individual.

Length of the Working Day. — The degree to which work is pleasurable or irksome depends in large part upon the length of the working day and the frequency of vacation periods. Regardless of how much delight one may derive from a given task, continuous application to it will make it irksome through the inducement of fatigue. The point at which fatigue begins depends upon several factors. Among these may be mentioned the following: the attitude of the worker toward the work, his physical condition, the nature of the work, and his desire for economic goods. Depending upon the total situation so far as these and perhaps other factors are concerned, fatigue may set in after a short period of work or not until some ten or more hours of application, and, of course, in the case of certain persons it may be present from the beginning.

The progressive shortening of the working day and the increasing use of vacation periods may be interpreted in large part as due to the fact that work becomes irksome as there is less necessity than formerly for working a given number of hours each day. That is, increased economic efficiency tends to make one unwilling to put in as much time at work as was formerly necessary in order to have a given standard of comfort.

The decrease in the hours of work per week in manufacturing plants in the United States since 1909 is shown in the following table.

TABLE 4

PERCENTAGE DISTRIBUTION OF WAGE EARNERS ACCORDING TO HOURS OF LABOR, FOR ALL MANUFACTURING INDUSTRIES COMBINED, IN THE UNITED STATES; 1909, 1914, 1919, 1921, AND 1923[1]

Prevailing Hours of Labor per Week	*Percentage Distribution of Wage Earners*				
	1909	1914	1919	1921	1923
44 and under..........	...[2]	...[2]	12.2	13.7	9.9
48 and under..........	7.9	11.9	48.6	51.5	46.1
54 and under..........	30.6	51.1	74.1	77.5	76.8
60 and under..........	91.3	94.1	96.9	97.5	98.1
Over 60..............	8.7	5.9	3.1	2.5	1.9

[1] Derived from data in Census of Manufactures for above dates. Comparable data for 1925 not available.

[2] This classification is not given in 1909 and 1914 censuses.

Data showing the extent to which the persons who are gainfully employed in the United States take vacations are not available, but the practice is certainly very extensive. This is similar to the reduction in hours of work per day in its relation to the irksomeness of labor. It results from an increase in the "felt-irksomeness" due to a lessening in the necessity for continuous work.

Another angle to the increasing utilization of leisure is that it is only thus that an increase in goods beyond necessities is worth while. Comforts and luxuries cannot be used if there is no leisure. There would be no point to having a "pleasure car" if one did not have time to ride in it; nor an attractive house if one could be in it only during brief sleeping hours between continuous days of toil.

It might seem at first thought that a people has two alternatives as economic efficiency increases: either to consume more goods or to take more leisure. But it is only within certain limits that there are these two alternatives. More leisure is eventually required if more goods are to be consumed; and, normally, some increase in the amount of goods consumed will be preferred rather than that the amount of leisure be considerably increased and the scale of consumption left unchanged. This is clearly indicated by what has been happening in our society for some time: both the consumption of goods and the amount of leisure have been increased.

Modern Methods and Irksomeness. — The point is often made that the present extensive utilization of machinery is very disadvantageous to our society from the point of view of the human cost of production. In other words, it is thought that machine processes are detrimental to the individuals engaged in them — that the routine is deadening — that there is none of the joy that comes from creative work — that men are accordingly pushed backward toward the animal stage rather than forward toward richer personalities. In contrast with the present age, the period of hand manufacture (craftsmanship) that prevailed during the Middle Ages is often portrayed as a very desirable situation.

There is undoubtedly something to be said in support of this view. But it is necessary to look back upon the past with a good deal of caution. There is an almost universal disposition to see the past through rosy glasses. Each individual tends to treasure in his mind the pleasant experiences of life and to forget the unpleasant ones, and the race, likewise, tends to glorify the past. Hence, as a phase of life gives way to something different, there is a marked tendency to extoll the old and decry the new. As men have gone successively from hunting to herding, agriculture, hand manufacture, and machine production the movement has been bewailed by many. The slavery of the new has been contrasted with the freedom of the old. The statement attributed to Mohammed, who was a rider of the plains, is typical of the universal complaint in the face of change: "Wherever the plow has gone servitude and shame have followed." [1]

Thus one should be cautious in accepting judgments in regard to the desirable aspects of conditions that are no more. Most of the work that was done during the Middle Ages was perhaps of a dull, humdrum sort. Some of it was such as to ennoble the doers thereof, but that is true to-day, and, in fact, has been true of every age. There is what may perhaps be called machine "slavery" now, but in agriculture there is and always has been "slavery" to the farm animals and to the crops. In our modern machine industry there is undoubtedly a great deal more freedom in the form of leisure than there was in agriculture fifty years ago, or even to-day. But we are wise, of course, in looking upon the present work processes with critical eyes. It is thus that plans may be evolved for reducing the irksomeness of human toil.

In addition to the elements noted above that contribute to the human cost of work, there is another that should not be neglected, namely, the toll in accidents and occupational disease. According to the 1921 survey made by a committee of the Federated American Engineering Societies, there occurred in 1919, in all industries of the United States, about 23,000 fatal, accidents, about 575,000 non-fatal accidents, each causing four weeks' or more disability, and about 3,000,000 accidents each causing at least one day's disability.[2]

Reliable data of the same general nature concerning occupational diseases are difficult to secure, especially in view of the fact that it is often impossible to decide whether any particular individual who is afflicted with a given disease has that disease because of his occupation or from some other cause. But certain diseases such as lead poisoning, for example, are obviously occupational in nature. The respiratory diseases are frequently due to the type of work in which the individual is engaged. It is estimated, for example, that at least 9.06 per cent of all wage earners "work under conditions more or less detrimental to health and life on account of atmospheric pollution or the relative presence of atmospheric impurities leading to tuberculosis and other respiratory diseases."[1] While in most instances, occupational diseases cannot be definitely distinguished from those non-occupational in nature, yet medical authorities generally agree that the causes of occupational disease are widespread and are much more dangerous to health than they are commonly recognized as being.

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[1] N. S. B. Gras, *An Introduction to Economic History*, 1922, p. 71.

[2] *Waste in Industry*, Federated American Engineering Societies, 1921 p. 331.

III. MOTIVES IN ECONOMIC ACTIVITY

The "Economic Man." — It was emphasized early in this book that men in their economic activities try to enhance their economic interests and that their attempt to do this secures their placement in the economic society. Exception may be taken to this statement, as, of course, to almost any statement that may be made about the conduct of men. Human life is so complex that general statements in regard to it are almost necessarily lacking in universal validity. It is, then, not entirely true that men seek to enhance their economic interests. Certainly it is not true that all men, at all times, and under all conditions get all that it is possible for them to get in the form of economic goods or income. There is no *economic man* in this sense. The economic aspect of life is only one of its many aspects; the non-economic interests constantly compel the submergence of the economic interest. Indeed, the economic interest is largely only a means of serving the other interests of life, and is normally held in subordination to them.

The desire to stand well with his fellows prompts a man to make money, for in this way he may have the things that others have and do the things that others do. But this desire for esteem also limits him in his money-making. The group of which each person is a part has a code of conduct governing the economic relations that is as definite as that governing other aspects of life. The violation of this code tends to put one outside the pale. Thus it is only within certain limits that a person normally pursues his economic interests. There are certainly but few people of whom it could not truthfully be said that there are many things that they would not do for even large economic rewards. The nature of these restrictions varies greatly from one social group to another, but they are nevertheless very real in all groups.

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[1] United States Bureau of Labor Statistics, Bulletin No. 231, 1918, p. 12.

Similarly, other urges and acquired response patterns in life limit the economic interest. The mating urge, parental desire, love of country, ambition to accomplish a given task, devotion to a cause, as, for example, to a trade union, or its opposite, may draw one away from the work, or the bargain that will yield the most money. But, to repeat a point made earlier,[1] these urges cannot lead the average individual to forsake entirely his economic interest, since it is only out of economic goods that it is possible to serve these interests, or indeed to maintain life itself. These urges and acquired response patterns merely limit the quest for economic gain.

Also, displeasure at the conduct of another person may lead one to sever economic relations when it is contrary to one's economic interests to do so. Furthermore, lack of knowledge and lack of ability or desire at a given moment to balance alternatives carefully often prevent a person from maximizing his economic interests.

But when all of these elements are accounted for, the fact remains that most persons buy in the cheapest market and sell in the dearest one, for this does not usually involve the sacrifice of any of the non-economic interests of life. This means that the usual individual, in his economic transactions, is normally an *economic man*. He tries to make his money go as far as it will when he buys — he tries to make his goods or his labor services fetch as high a price as they will when he sells, all other things being equal. But, to reëmphasize what has just been said, it is only within limits that all other things are equal.

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[1] Chapter I.

The exercise of economic self-interest, subject, of course, to restraining limits such as have been noted, has strong social justification. To choose carefully among the many offerings of merchants in order that clothing sufficient for an entire family may be secured, to buy the best automobile that may be bought for a given sum of money, to engage in that one among several equally reputable occupations that will yield the largest income, is not to do a belittling act. Indeed, conduct other than that has always been condemned by moralists.

To the question as to why most men wish to make money, there are many answers. The procurement of the necessities, comforts, and luxuries of life for one's self and dependents is vitally important to most men. It is in this way, as stated above, that most of life's interests are served. But entirely apart from the use to which economic goods are put, the attainment of economic income or economic possessions is one of the most universal of the many activities of men. This is tied to the fact that purposeful activity is vital to human life. One is invariably setting up hurdles and attempting to get over them. As in other ages, the game of life is played on many fields — art, literature, science, the professions, and many others besides business. But with a great many people, the goal that they may easily set up and which they may make some show of attaining is that of a given economic income. The economic struggle in and of itself gives zest to life.

IV. Predatory Labor

Most kinds of work are parts of the general coöperative endeavor of our economic life. At the same time that a person is making money for himself, he is usually performing a service for someone else. But it is not universally true that money-making and social service go together. Some persons are predatory in their economic activity; they prey upon their fellows; they take without giving; they do not assist in the common enterprise of making a living for the world.

There are usually many persons in an economic society who do not make their living. This is true of the young, the old, the infirm, and the idle rich, to mention only certain groups that get without giving. Such persons are parasites upon those who work, but not many of these could be said to prey upon their fellows. This is clearly true of children, and of those who are incapacitated for work.

Those who may be called predatory laborers are, by definition, not idle. They work, but in working they do not render a service to their fellow men from whom comes their living. Such persons thus get without giving, although they may work very hard.

It is difficult, if not impossible, to draw a sharp line between predatory and non-predatory, socially useful, labor. As among most phenomena of life, there are border line cases here that cannot with certainty be classified in one group. A given kind of work may be partly predatory and partly useful; and, also, there may be differences of opinion as to whether a given line of activity is socially desirable.

The purveyor of harmful drugs and narcotics, the seller of fraudulent securities, the attorney who secures freedom from prison for an anti-social person, are not performing socially desirable services; they are predatory laborers. But what of the keeper of a gambling den, or of a "bookmaker" at a horse race? If their only service is to assist some people to get money away from other people, for which they receive payment, they are surely predatory. But if patrons get enjoyment from the betting which these persons make possible are they not to some degree socially useful? But even so, does the social gain outweigh the social loss? If it does not, then the net results of the work of these persons is predatory.

What of middlemen, advertisers, and stockbrokers? A discussion of the work of these persons must be postponed until later. Suffice it to say here that economists regard the work which these persons do as being for the most part, at least, socially useful. But rather than attempting to determine what forms of economic activity are predatory, the present purpose is primarily to call attention to the fact that labor may be unproductive of social utility. To effect such arrangements and to cultivate such desires among men that all labor will be socially useful is an ever-present task of citizenship.

V. Various Labor Groups

The various labor groups in an economic society necessarily have conflicting interests. As any one group gains at the expense of the others it is relatively better off than it was. There is always danger that the labor group made up of employers will represent their interest as being the general social interest in cases of conflict with the wage-earning labor group; and there is also always danger that the more vocal part of the general public, which is the more prosperous part, will express agreement with the employing group at such a time. The identification of one's own interest with the social interest is almost inevitable on the part of any economic group. Thus the payment of high wages to day laborers may easily be regarded as socially ruinous by the groups whose economic position would thereby be made less fortunate.

According to the democratic ideal, which prevails with us, a society becomes more ideal as the economic position of the lower labor group is improved. That is, as wages in the lower groups rise — as the prices of labor service in the various groups become less unequal — as it becomes less possible for the upper groups to employ corps of servants — general social welfare is usually said to be upon a higher plane.

PROBLEMS AND EXERCISES

58. Argue that very low wages tend to perpetuate themselves.

59. Are state universities due to a high degree of economic efficiency? Do they tend to alter the prevailing degree of economic efficiency? Discuss each question.

60. "We must have ignorant laborers from abroad if we are to remain prosperous." Discuss.

61. Show that a higher degree of honesty on the part of students in the use of the university library would result in the saving of labor. Is this point applicable to our general economic life? Explain.

62. "The Prohibition Amendment was a natural result of the high degree of economic efficiency which is found in America." Is there reason for accepting this as true? Discuss.

63. Consider three industrial leaders whom you know. Have they acquired success through rendering a service or by predatory means? Explain.

64. "There is no economic man." "We are all economic men." Defend both statements.

65. Make a list of the motives to business activity that perhaps characterize (*a*) the student canvasser; (*b*) the college graduate entering a profession; (*c*) a manufacturer; (*d*) an actor; (*e*) an unskilled street laborer.

66. "The material progress of the United States during the past hundred years has made it inevitable that the working day be shortened." Is this sound? Discuss.

67. Cite a case from your own experience to illustrate the point that the past is often seen through "rosy glasses." Under what circumstances is the opposite condition true?

68. What point in the text is involved in problem 67?

69. Cite cases from your experiences of "balked ambition that has resulted in lethargy."

70. "Isn't it too bad that we haven't a permanent serving class in America?" To what economic group does the author of this statement probably belong? Is the point made sound? Why or why not?

71. What reasoning lies behind Taussig's statement that the material prosperity of the United States depends upon the opportunity of the "low-born person" to rise?

72. Cite a case from your own observation of predatory labor. Prove that this is a case of predatory labor.

REFERENCES

For a good treatment of motives to economic activity see Z. C. Dickinson, *Economic Motives*, 1922, and also an essay, *Non-Commercial Incentives in Economic Life*, by Paul Douglas, in *The Trend of Economics*, 1924, edited by R. G. Tugwell. An exhaustive study of man's creative tendency as expressed in economic activity is given in Thorstein Veblen's *The Instinct of Workmanship*, 1914. Veblen also discusses this subject in a shorter and more readable form in the American Journal of Sociology, Vol. IV, September, 1898. Among the books in the appendix see Carver's *The Principles of National Economy*, 1921, for a discussion of the personal traits that make for economic success.

CHAPTER VII

POPULATION AND NATURAL RESOURCES

The natural resources at the disposal of the people are, clearly, a governing factor in their economic life. Not only is the nature of the work that they may do conditioned by the natural resources at their command, but the volume of the product is dependent on the fertility of the resources. Fortunate indeed is a community that is possessed of a natural environment so varied as to furnish opportunity for the exercise of the many talents that tend to appear in a large group of individuals, and sufficiently fertile to permit a high standard of living.

Trade Relations and Resources. — In order that a high standard of living may be maintained, it is not necessary that the natural resources be sufficiently varied to furnish the many different goods that are desired. For, if the resources are fertile, then, even although they be limited to certain forms, it will be possible through trade relations with other regions to secure the complement of goods that the people of a community desire. If the natural resources should be limited almost exclusively to fish, for example, a people might, if the fish were sufficiently abundant, secure from other persons, in exchange for fish, enough goods to permit a high standard of living. Indeed, this is just the condition that prevails within any number of different regions within the United States. Coal, copper, and timber; land suitable for the growing of cotton, wheat and citrous fruits; grazing lands and fishing areas, to mention a few of the nation's resources, are somewhat narrowly localized, but through exchange relations the people of each region use their natural resources to secure the products of other regions. The various regions thus enjoy the resources of the entire country. Similarly, the exchange of products among nations tends to amount to a mutual sharing of the natural resources of the world.

Numbers and Resources. — The number of persons that are to use the natural resources of a community, whether directly or through the exchange of products with the people of other communities, will condition the returns per person that can be secured. In more detail, production per person depends upon three factors: (1) the number of persons, (2) the extent of the resources, and (3) the methods employed in utilizing the resources. The methods that are used as suggested in an earlier chapter, are of tremendous importance, but in order to emphasize the importance of the relation of numbers to resources we shall assume a given state of knowledge in regard to methods of work. Under such an assumption, it will appear that there are two distinct stages in the utilization of resources as the number of persons increases. The first of these stages is called *increasing average returns* and the second, *diminishing average returns*. These terms are usually used without the inclusion of the word *average*. They are then, however, less descriptive of the situations to which they refer than they are if the longer form is used. In addition to these two stages, a third stage will appear if the number of persons is increased sufficiently. This may be called the stage of *decreasing total returns*.

Increasing Average Returns. — As the number of persons that attempt to utilize a given area of resources increases beyond a very few the returns per person tend to increase, for as numbers increase there tends to be a degree of mutual assistance, or coöperation, which makes it possible for the total output in economic goods to be increased sufficiently in comparison with the increase in numbers to cause the average output to be thereby increased. Another way of stating this is that the degree of specialization may be so increased with the additional numbers that the above result will be experienced. It is conceivable that in certain cases there might not be a stage of increasing returns, but it seems rather improbable that in the utilization of a given area of natural resources two or more persons could not secure a larger product per person than could be secured by one individual if he were working alone.

Diminishing Average Returns. — Despite the fact of increasing average returns for a time, the possible output from any natural resource is limited. This is true, of course, of any object. Because of this simple fact, as the number of persons who are using a given area increases, it will inevitably happen that the returns which they can secure will eventually fail to increase in a ratio equal to the increase in the number of persons. That is, it is inevitable that as numbers are augmented, the average output — the per capita product — will decrease. When this becomes true, the community is said to be in the stage of diminishing returns.

Decreasing Total Returns. — Finally, however, the total output will not be increased as more workers are added. Indeed, the total output may be reduced as a result of adding more workers. When such conditions prevail, the stage of decreasing total returns is said to have been reached. The following table, number 5, illustrates the conditions which have been described in the two preceding paragraphs.

As already indicated, this table is an illustration of the results that follow an increasing application of workers to a given natural resource as, for example, a tract of farming land, a region used for hunting and fishing, or the combined resources of a nation. Thus four persons will produce 38 units in, say, one year, while five persons would produce a total output of 50 units. It must also be noted that in the table there are assumed to be no differences whatever among the workers. That is, the 16th worker is just as able as is the 7th. The reason that he does not make any addition to the output is that the region is overcrowded, not that he is any less able than are the earlier workers. Further, in this table, no account is taken of the equipment that is used, in order that the major relationships may be more easily illustrated. The data are not compiled from experience, but they are clearly illustrative of the condition of economic life that is under investigation.

The average output per worker is shown by the table to in-

TABLE 5

VARYING NUMBER OF PERSONS WORKING ON A GIVEN NATURAL RESOURCE WITH GIVEN METHODS

Number of Combination	*Number of Workers*	*Acres of Land*	*Total Output (Physical Units)*	*Average Output per Worker*	*Increase in Output from Addition of One Worker*
1	4	10	38	9.50	..
2	5	10	50	10.00	12
3	6	10	63	10.50 increasing	13
4	7	10	78	11.14 average returns	15
5	8	10	92	11.50	14
6	9	10	104	11.55 optimum returns	12
7	10	10	115	11.50	11
8	11	10	125	11.36	10
9	12	10	134	11.16 diminishing	9
10	13	10	141	10.84 average returns	7
11	14	10	145	10.35	4
12	15	10	147	9.80 maximum total returns	2
13	16	10	146	9.13 decreasing total	−1
14	17	10	144	8.47 returns	−2

crease with the addition of successive workers until 9 are engaged. Hence, up until and when 9 persons are working on this tract of land, the community is in the stage of *increasing average returns*. The addition of another one, the 10th, however, brings a reduction in the per capita output. Thus according to our definition, the state of *diminishing average returns*, or *diminishing returns*, is reached after the 9th worker has been added. The employment of 9 workers upon this area thus gives the *optimum* return per worker — the highest average output per person that can be secured.

The table shows an increase in the total output as additional workers are added up until the addition of the 16th worker. This may be called the point of *maximum returns*. In the case of a nation, this point is not of much concern for it is almost impossible to conceive of a population so dense that another worker would not be able to produce something in addition to the amount that could be produced without him. Still the point is of theoretical importance. Not to understand the possibilities of such a situation, regardless of its probability, is to be unappreciative of the fundamental relation between numbers and resources. Certainly for small tracts of land, the point of maximum returns is clearly possible.

The last column is very interesting in connection with the preceding one. It shows that beginning with the 8th man, each succeeding worker added fewer units than did the preceding one. The stage of diminishing returns is sometimes defined to make it begin, in the terms of this table, after the 7th worker has been added. That is, it is defined as beginning when an additional worker will add less than was added by the last previous one. Writers are somewhat free, of course, to make their own definitions, but if the definition that has been generally accepted since the establishment of economics as a science is to be followed, then in terms of the table, diminishing returns do not begin until after the addition of the 9th man.

By diminishing returns, then, in the case of the application of labor to a country's resources, one does not mean that the total returns have begun to diminish, nor that an additional worker increases the product less than did the workers that were added previously. What is meant is that the average returns per worker, the per capita returns, would diminish if more persons were added to the working population, or that the average returns have diminished as a result of an increase in numbers.

Diminishing Returns in Business Establishments. — The principle of diminishing returns is of universal application as was stated above. With any one factor given, the combination of more units of another factor will inevitably result in diminishing returns. This is due to the simple fact that the uses of returns that can be procured from one object are limited. In the firing of a coal furnace, for example, as more and more coal is added, the stages of increasing and diminishing returns, and finally maximum returns appear successively. The principle is also illustrated when a business man increases the scope of his business. In such a case the man is the constant factor, and the plants or business items with which he deals represent the changing factor. As additions are thus made to the enterprise a point will be reached at which the returns per unit of the business will begin to diminish. In fact, as already indicated, every combination of land, labor, and equipment involves the principle that is under discussion. Just what balance should be maintained among the various factors in any business — how much land should be used, how many buildings, how many machines, how many laborers — is, obviously, a vital problem to every business man. The discussion of this subject must be postponed to a later place,[1] as attention must be restricted in this chapter to a consideration of the relation between the extent of the population and the natural resources.

Diminishing Returns and Landowners vs. Non-landowners. — The entrance of a community or a nation into the stage of diminishing returns affects the economic interests of landowners and non-landowners so differently that a discussion of this point may contribute to an understanding of the significance of diminishing returns. If the area indicated in the table is typical of the whole national area, then numbers should be so regulated that only 9 persons would seek employment upon this tract of land, if it is the national policy to maintain the highest possible standard of living.

The private landowners, however, find it advantageous to have the population increase up to the point of maximum or total returns. Wages tend to equal the amount added by the last laborer engaged. For example, in terms of the table an 11th worker would not be paid by a private landowning farmer more than 10 units, for that represents the addition which comes from his work. The farmer could pay him and the other laborers at the rate of 11.36 units, neglecting other expenses, and "come out even," but this would mean that he would be giving away the possible profit which he might have. Assuming that all other regions are similarly populated, the 11th worker must be content with 10 units, as he cannot get more from any other owner. Then, since the other laborers are no better than he, as is assumed to be the case, they, too, can get but 10 units each. The total wage bill as indicated by the table will then amount to 110 units for this farmer, but the product will be 125, leaving 15 units for the owner as profit, or more properly, as land rent. If laborers are so numerous that 13 seek employment on this farm, that will mean that wages here and elsewhere in the country will be 7 units per worker. This will make a total wage bill for our farmer of 91 units and this subtracted from the total return of 141 units will give him a land rent of 50 units.

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[1] Chapter XV.

Thus with laborers so few that only 11 seek employment on such an area, wages will be 10 units per person and the 11 laborers together will get 110/125 or 88 per cent of the total product; but with population so dense that 13 workers will work upon this tract of land, wages will be 7 units per person and the 13 will get 91/141 or only 64 per cent of the total product. Thus as numbers increase, the non-landowning portion of the population is able to command less and less product in the form of wages per person and at the same time a constantly decreasing share in the total product. As individuals they lose both absolutely and relatively. The land famine which is indicated by the emergence of diminishing returns thus smites the non-landowning portion of the population "with both edges of its sword."[1]

But if the population is so adjusted to resources that only 9 persons would seek employment upon this tract, wages would tend to represent the entire product, neglecting, as stated above, all other elements in the situation. Each laborer would tend to get 11.55 units and nothing would remain for the landlord. There would be no land rent, and, accordingly, there would not be any absentee owners, for workers would not become tenants and pay "rent." They could not afford to do so, for then they would have less than the 11.55 units which is the rate of wages. Land would be for the most part free. No person would care to own it, save in order to enjoy improvements which he had made or expected to make upon it.

Thus it is only when land gets into the stage of diminishing returns that it bears any rent for the owner. It is only then, or in anticipation of that event that it has any value, save as a means of protecting improvements. And as it is pushed farther and farther into the stage of diminishing returns it yields more and more rent to the owner without any effort on his part. In other words, as wages fall lower and lower in terms of product due to the overcrowding of the land, rent, and thus the market price of the land, rises higher and higher. Hence, it is apparent that owners of natural resources will profit from a policy that promotes such an increase in population, by immigration, for example, that the standard of living throughout the nation will be depressed. It is to the interest of the private landowners to have the nation far into the stage of diminishing returns, but that is clearly at the expense of the economic well-being of the nation's population.

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[1] H. J. Davenport, *The Economics of Enterprise*, 1913, p. 180.

The institutional character of the present economic system, which was discussed in Chapter V, can be further illustrated by reference to the relation between diminishing returns and wages. The discussion in the preceding paragraphs has been in terms of private ownership of land. As indicated above, if eleven persons should seek employment on a tract of land such as is indicated in the table, wages would tend to be 10 units per person. The average output per person would, however, be 11.36 units. Under the prevailing institution of private property it seems "natural" that wages should be 10 units in such a case and that the landlord should get net rent equal to 1.36 units per person working on the land. If, however, land were owned collectively, as under certain forms of socialism, it would seem "natural" that wages should be 11.36 units per person. In the latter supposed case each laborer would be held to have *produced* 11.36 units, but under the institution of private property, each laborer is commonly said to have *produced* 10 units. One method of reckoning wages is just as logical as the other. The difference comes entirely from two contrasting methods of ownership, or institutions.

Land Rent and Diminishing Returns. — The above discussion suggests a method of ascertaining whether at any given time a nation is in the stage of diminishing returns. If rent is being paid for land, if land commands a price, then the stage of diminishing returns must have been reached in that particular location on the best grade of land; and the higher the rent, or the greater the price of the land, the farther must the community be in the stage of diminishing returns. But one section of a community may be in a condition of diminishing returns while the entire community may be in the stage of increasing returns. The concentration of population, as in a city, may through the high rentals that are paid for ground space indicate that the stage of diminishing returns has been reached in that place, but land that is some distance removed from the city may still be in the stage of increasing returns. The eastern section of the United States was in the stage of diminishing returns long before that point was reached in other sections of the country. This is to be explained by the reluctance of persons to move into new territory, or to take up new kinds of work. Rather than move to new land and enjoy a larger product, many persons prefer to remain with old friends and at accustomed lines of employment. When rent is being paid for all of the land of a nation there can be no question that the country is in the stage of diminishing returns.

Improvement in Methods. — In the preceding analysis a given method of work has been assumed to prevail. But as methods of work change, the situation relative to numbers and resources necessarily alters. An improvement in method is equal to an increase in the extent of resources. In other words, improvements may counteract the decline in the output per person that tends to come with an increase in the population; and indeed they may easily make it possible for a very large number of persons to have a larger per capita output than was possible when fewer persons utilized the natural resources. In terms of the table, an improvement of some kind might make it possible to double or treble the output per person with any given number of workers.

It is because of the tremendous improvement in economic processes, both mechanical and non-mechanical, that 118,000,000 people are able to enjoy a higher standard of living in the United States to-day than prevailed over the same area in 1870 with a population of only 38,000,000. This may, of course, be due in part to an increase in specialization or coöperation that has been made possible by the growth in numbers. That is, the nation may have been in the stage of increasing returns during part, at least, of this period. But undoubtedly, the marked improvements that have been made since 1870 in mechanics, industrial chemistry, and agriculture have been of tremendous importance in making possible the present standard of living. Among the many significant improvements during this period may be mentioned the invention of the gas engine, perfection of the electric dynamo, great advances in the manufacture of steel, increases in the size and power of steam engines and hoisting and moving machinery of all kinds, and very substantial improvements in the yield of crops and in the productiveness of live stock.

The effect of method upon economic welfare can be even more strikingly shown by comparing the well-being of the people in the United States to-day with the standard of living that prevailed among the North American Indians. The Indians had at their command the same natural resources that are now being used by the people of the United States, but were able to maintain on a very meager standard of living only some 150,000 to 300,000 persons as a maximum. An increase in population with them would have taxed severely the natural resources as they were utilizing them.

After a region is well populated, a very important question, so far as economic welfare is concerned, is, what will be the effect of an increase in numbers upon improvement in industrial methods. An increase in population might lead to improvements through the presence of persons of genius who would not have been born if numbers had not been augmented. Further, the problem of well-being might be made so acute from increased numbers that men would devise new methods as a result of this pressure. On the other hand, large numbers might so reduce welfare that less effort could be devoted to education, with the result that the general state of knowledge would be reduced, and industrial improvements thus made less likely than if numbers had not been increased. Further, an increase in numbers might eventually lead to a state of misery and hopelessness on the part of the general population that would bring a marked deterioration in the methods of work. The effect of an increase in numbers upon improvements in methods is thus problematical. If an addition to the population should cause improvements to be made in the industrial methods, then, economic welfare might be increased as numbers are augmented, depending, of course, upon the relation between the degree of improvement and the number of people that are added.

One "improvement" that may counteract the pressure of population upon resources may be merely a change in diet from foods requiring a large area for their production to foods that can be produced in smaller space. Meats as compared with cereals are very expensive in terms of land area. It has been computed that corn yields 3,124,200 Calories per acre, and potatoes, rye, wheat and rice over 1,500,000 Calories per acre; while pork and beef afford respectively only 672,945 and 130,000 Calories for each acre of land utilized in their production.[1] It is, of course, by no means true that these figures indicate the relative number of persons that could be supported on a vegetable diet as compared with a meat diet, but they do indicate that a change in the diet of the American people away from meats would make it possible to provide food for many more persons than compose the present population.[2]

What ability the men of the future may have in using the resources of the earth is beyond our ken. Some improvements may be definitely expected to take place, but it does not seem probable that the tremendous advances in technique during the past one hundred years will be duplicated during the next one hundred years. Certainly the probability that great improvements will be made is not sufficient to warrant an attitude of indifference as to the relation between numbers and resources. History and contemporary conditions in certain countries show very clearly that numbers may so outrun improvements in methods that well-being may be reduced far below what it might be if the population were held in check.

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[1] Farmers' Bulletin, No. 877, U. S. Dept. of Agriculture, 1917.

[2] Alvin Johnson, "Are We in Danger of Over Population?" *The New Republic,* November 21, 1923, Vol. XXXVI, pp. 328–329.

The Growth of Population. — Any plant or animal has the latent capacity to increase to tremendous numbers if food is available and enemies absent. Human beings are no exception to this rule. There has probably been no time since the beginning of civilization, however, when this maximum biological possibility of increase has been utilized by the human race. While the birth rate is very high in some countries to-day, it is probably nowhere so great as it might be, nor is the death rate in any country to-day so low as it would be if present medical knowledge were utilized to the fullest extent. Within recent years Canada has perhaps had the highest rate of natural increase (birth rate minus death rate) of any of the larger countries. This has been estimated to have been 29.8 per 1000 between 1906 and 1911.[1] This rate of increase means a doubling of the population every twenty-four years.

The significance of this rate of increase may be indicated by the fact that if the earth had been depopulated at the beginning of the Christian era, except for one couple, the doubling of the population every twenty-five years would have brought the population of the world to the astounding figure of 302,231,454,903,656,909,676,544 by 1925. The absolute impossibility of such a rate of increase being maintained for nineteen centuries is evident from the fact that such a number would mean 189,000,000 persons for every square foot of land area of the world, including mountain peaks and swamps. Clearly, the limitation of natural resources imposes a positive check upon the growth of the population.

One of the most significant statements of the population question was made by Malthus, an English writer, in an essay published in 1798. His position was, briefly, that population tends to press upon natural resources so that most of the population will always be in a state of misery. In subsequent editions of the essay, he modified the rigor of his statement somewhat, allowing some scope for the prudential check as a means of keeping down numbers. By the prudential check he meant the postponement of marriage and family responsibility until means were available to give a proper standard of living. But despite this modification, his position remained essentially a very pessimistic one. This is the Malthusian law of population.

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[1] G. H. Knibbs, *Mathematical Theory of Population*, Census, Commonwealth of Australia, Appendix A.

The standard of living that prevails to-day shows that the conditions predicted by Malthus do not exist. It is argued by some, however, that the development of the western hemisphere and the tremendous increase in efficiency made possible by the mechanical improvements of the past one hundred and fifty years, rather than checks upon the growth of population, are responsible for the relatively high standard of living to which we are accustomed; and it is argued further, that with no new lands to be occupied and with perhaps no great additions to our mechanical effectiveness it will be only a question of time until overcrowding will result in the state of misery that Malthus thought to be the lot of man.

The two big factors in the situation are, obviously, the rate of natural increase, and the state of the industrial arts. No one knows, as suggested above, whether much or little improvement in work processes is to be made in the future. There would seem to be no question that some mechanical progress may be confidently expected, but whether this will be of major proportions as was true of our industrial improvements during the past century cannot be foretold. If the future advances in technique are assumed to be of minor rather than of major magnitudes, then the important question is the rate of natural increase in the population.

Even a low rate of increase will, of course, mean overcrowding eventually. The present rate of natural increase in the United States is about 11 per 1,000 per year. At this rate numbers would double in sixty-two years. But the birth rate has declined in this country since the beginning of our national existence,[1] and if it should continue to decline the population will finally become stationary.

It is perhaps reasonable to believe that our population will become stationary in another hundred years or so. Indeed, this condition may be less than one hundred years away.[2] Families of all classes are more and more exercising choice in regard to the number of children. The increasing degree of city life is undoubtedly a factor in fostering the conscious limitation of numbers. In addition to its effect upon conscious control, the highly developed complexity of our modern life may reduce fecundity. But regardless of the cause, the fact of decline in the birth rate in every country affected by the modern industrial movement is unquestioned. This decline has manifested itself in Catholic as well as Protestant countries, among colored populations, as well as white.[3]

Whatever may actually be in store for the human race in the future, there can certainly be no question that a high standard of living is possible only by a sharp limitation of persons in relation to resources, unless there should be marked improvements in the industrial arts. The increase in the population of Europe and England during the past hundred years has undoubtedly prevented a realization of the gains that would otherwise have come from the great increase in industrial efficiency during that time. And perhaps, also, the population increase in the United States has kept economic well-being below the point it would have reached if the population had not increased so rapidly.

It is certainly only because one desires large totals in national production rather than a high degree of individual welfare that there is reasonableness in the oft-repeated statement that the decline in the rate of increase of the population is undesirable economically. However, if a large military population is a major desideratum in national policy, an augmentation of numbers should be encouraged. Also, a desire on the part of the more well-to-do classes for greater ease and comfort would justify them in encouraging an increase in numbers on the part of the masses to the end that wages of laborers may be low and servants plentiful. This subject is discussed more fully in Chapter XLV.

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[1] W. F. Willcox, "The Change in the Proportion of Children in the United States and in the Birth Rate in France During the Nineteenth Century," *Journal of American Statistical Association*, March, 1911, Vol. XII, New Series, No. 93, p. 495.

[2] L. I. Dublin, "The Fallacious Propaganda for Birth Control," *The Atlantic Monthly*, February, 1926, Vol. 137, p. 186.

[3] Alvin Johnson, *op. cit.*

PROBLEMS AND EXERCISES

73. (*a*) Assume a community of 100 persons who live almost entirely upon corn of which they produce 800 bushels per year, and give an arithmetical illustration to show an increase in the number of bushels produced per person as numbers increase up to a population of 200, and a decrease in the per capita output of corn as numbers increase above 200. Arrange data in three columns marked (1) numbers, (2) total output, (3) output per person. Use about ten sets of figures.

(*b*) What part of your table shows increasing returns? Diminishing returns? Do the total returns shown in your table diminish when the community gets into diminishing returns? Explain. Might a point be reached beyond which no increase is possible?

(*c*) What alteration in conditions might enable 300 persons in this community to produce twice as much corn as 200 could produce as shown in your table?

74. (*a*) In terms of table 5 what conditions in a community would cause wages to be 11 units per person? 9 units? 2 units?

(*b*) How much rent would a landowner get if wages were 11 units? 9 units? 2 units?

75. What would be the effect upon land rent of the discovery of a method of making synthetic food at an extremely low cost? Explain.

76. "When one gets into the stage of diminishing returns one begins to lose money." Do you agree? Answer on the basis of table 5.

77. Why would some economists say that the addition of the 7th worker put this community in the stage of diminishing returns? Is this definition correct? Explain.

78. "It is of course true that industry, especially agricultural industry, is subject to the law of diminishing returns. Nevertheless history shows very plainly that, as population has increased from a few millions to more than a billion, the supplying of the economic needs of society has become not more difficult but much easier." Show that the two statements are not contradictory.

79. "The land famine smites the non-landowners with both edges of its sword." Davenport. What, evidently, are the two edges referred to?

80. It is said that population pressure stimulates invention and leads to progress. Evaluate this statement.

81. "With increasing numbers, human beings must find the food problem progressively a more serious problem; in its effect upon per capita production of commodities, overcrowded land is the same thing as poor land." Davenport, *Economics of Enterprise*, p. 180. Discuss the validity of this statement.

82. Can invention offset the effect of overpopulation? Do you think that there are limitations to invention and to man's inventive capacity? Discuss carefully.

83. As population continues to increase in the United States do you believe that economic well-being will increase or decrease? Why?

84. The Italian Fascist government advocates large families and insists that the unoccupied areas of the world shall go to that country which is overpopulated at home. Discuss.

85. Name at least six different checks upon population growth that are operative to-day. Consider both the birth rate and the death rate.

86. Does an increase in population affect the volume of employment? Discuss.

REFERENCES

A fuller treatment of the problem of diminishing returns is given in Chapter XV, and of population in Chapter XLV.

CHAPTER VIII

INDUSTRIAL EQUIPMENT

Men do not work with their bare hands. Indeed, just as soon as men became men they devised means that would assist them in their attempt to utilize the provisions of nature. Although these devices were very crude in their early stages, yet they were of tremendous importance. As already suggested, a knowlledge of how to construct and use industrial equipment is of far greater importance than the mechanical devices themselves, for the instruments if lost could be replaced, while if the knowledge of their construction should be lost they could neither be repaired when broken nor replaced when worn out, and the loss of knowledge of their utilization would make the devices of no importance. Ordinarily, the existence of an instrument implies the ability to use it and to construct another to take its place when it is worn out. Hence, to emphasize the importance of industrial equipment is to assume an understanding of its construction and utilization.

The industrial instruments which we have now, as has been emphasized in the earlier chapters, are of major importance in our economic life. Not only have men thus devised tools and machines to assist them in the utilization of the forces of nature, but early in the life of the race, animals were domesticated and made effective instruments of economic welfare. Such animals comprise an important part of our industrial equipment to-day. Obviously, any improvement that is made in them, as, for example, in increasing the power of draft horses, or the yield of milk from cows, or wool from sheep, is similar in its economic effect to improvements in machinery.

Indirect Goods. — The distinctive characteristic of the goods which may properly be classified as industrial equipment is that they make their contribution to the satisfaction of human wants indirectly rather than directly. A house, for example, satisfies wants directly by furnishing shelter, and usually, also, other utilities (services), while a hammer or a saw satisfies wants indirectly through being used in the construction of the house. Goods which thus give service indirectly through the production of other goods are called *production goods*, while those that yield their services directly are known as *consumption goods*.

The natural resources also for the most part yield their services indirectly, and are therefore to be classed as *production goods*. But there is a marked difference between these two groups of production goods: one is itself produced and the other exists independently of man's effort. The ever-present difficulty of classification; namely, the existence of border-line cases, is a little disturbing here. Some land, for example, by being cleared of trees or stone may be said to be produced. But regardless of this difficulty, the classification is important, especially because of the difference that results in the pricing of the goods that are produced, as compared with natural resources.

The discussion of the effect on the price of land of pushing cultivation into the stage of diminishing returns has already indicated the characteristic of natural resources that is distinctive in this respect; namely, as population grows, the prices set upon natural resources tend to increase without any effort on the part of owners. In other words, the amount that goes to owners of natural resources in the form of land rent, whether measured in goods or money, tends to increase as the population increases. This is not true of things that are produced. They tend to sell at prices that will return to their owners enough to cover the expense of producing them plus a reasonable profit. They thus do not normally yield a surplus over and above expenses as is true of natural resources after the stage of diminishing returns has been reached. The subject of the price relation of these two groups of goods will be much more fully discussed in the chapters on price.

Production goods may thus be divided into two classes, one that exists in nature without the work of man, and the other that comes as a result of his efforts being applied to the materials and forces of nature. The second of these groups — the goods that are produced and then devoted to the production of other goods — are commonly defined as *capital* goods, or simply, *capital*. The word *capital*, however, is used in so many other senses that it will perhaps usually be well to designate this class of goods by the longer term *industrial equipment*.

In addition to the yield of indirect services, production goods also give some direct services. That is, the owners of some production goods get the same satisfaction from them that is derived from beautiful rugs, furniture, or pretty clothes. Further, some goods are used at times as production goods and at other times as consumption goods. These considerations, however, do not invalidate the classification of goods into the two divisions of consumption and production goods.

An increase in the volume of equipment goods tends to increase economic welfare by making it possible to utilize more fully the forces and materials of nature. But clearly, a point could be reached where an increase in the volume of such goods would be wasteful rather than advantageous. If enough axes, for example, have been produced so that each woodsman has one, then it would be advisable to cease the production of axes and turn to the production of other things. However, if improvements in tools and machinery are being constantly made, the limit of advisable additions to equipment can hardly be reached. To promote such improvement, education, of course, is advisable. Further, since the primary purpose of having production goods is to produce consumption goods, any increase in the durability of the latter reduces the importance of the former. To increase the durability of houses, furniture, automobiles, roadways, and clothing is to augment welfare by making it possible to supply a population with those goods with less labor and less equipment than was previously necessary.

Roundabout Production. — The process of using intermediate goods in the production of consumption goods was characterized as "roundabout production" by a celebrated Austrian economist, Böhm-Bawerk. This term throws a clarifying light on the whole process of the manufacture and use of industrial equipment. It suggests the important truth that to produce equipment and then use it, is merely to use labor in a roundabout rather than in a direct manner. Thus to get wood for a fire in a direct manner would mean the gathering of sticks by hand from dead trees and branches; but to get it in a roundabout way one might successively secure iron ore, refine it, fashion it into a cutting edge, attach it to a handle, and then use the tool thus derived to cut down trees and chop them into firewood. All industrial equipment is thus part of a roundabout process.

The term *roundabout* normally carries the connotation of undesirability, and is thus a somewhat unfortunate term in this connection. But no term that more aptly designates the industrial process of producing one thing in order that it may be used to produce another has been suggested. Roundaboutness is not, however, invariably advisable in the production of goods and services. Whether it is desirable depends upon the circumstances of the particular case. In many cases it makes possible the doing of things that would otherwise be impossible, such, for example, as the felling of large trees; and in other cases, it increases to tremendous proportions the possibilities of accomplishment, as in the sending of messages by radio as compared with foot messengers. But in some situations the direct method is superior. In teaching, for example, the giving of services by the teacher directly to the student is usually preferable to having the services given indirectly through a phonograph or other mechanical device. Where the same kind of result can be secured in either way, as in catching fish with the hand or with a line or net, the choice will depend upon the economy of labor power in one method as compared with the other. If more fish can be secured with a given number of days' labor in one way than in the other, then, obviously, the one way is the more advisable, if the two methods are equally advisable in all other respects.

Wages and Machinery. — It is often said that high wages make the use of machinery advisable, while low wages make it economical to use labor without the assistance of machines.

The case of India, on the one hand, and that of the United States on the other, are given in confirmation of this point, for in the one country very low wages prevail and machinery is not used, while in the other, wages are high and machinery is extensively used.

The above discussion, however, tends toward the disproof of this contention. Since the use of machinery is merely the application of labor in a roundabout manner, the factor of wages would seem to be of no effect. The important question would appear to be whether labor — labor time — is saved in one method as compared with the other. Hence, the general question as to the desirability of using laborers to make machines and then use them, as compared with using labor to accomplish the task more directly, can be entirely resolved without a consideration of the rate of wages.

The business man, however, who is considering whether he shall substitute machinery for some of the laborers he would otherwise employ, must consider the problem in terms of wages and the price of machines. The relationship which has just been noted suggests that if wages are high, the price of machinery will also be high because of the expense of producing it, while low wages would mean that machines will be low in price. Thus in general, the rate of wages sets the prices that must be charged for machinery, and consequently, high wages do not make it profitable to buy and use machinery that could not be bought and used profitably if wages were lower.

But while high wages do not make the use of a roundabout method profitable if it would not be profitable if low wages prevailed, yet if either method is more profitable than the other, any increase in the rate of wages will increase its profitableness measured in terms of money. It is more worth while to a business man to save 10 days of labor if labor costs 10 dollars a day than if it costs 50 cents a day. Thus if the machine process is the more economical because of the saving of labor time, the higher the wage rate the greater is the gain to the business man, if the machine is used. As a result, an increase in wages may lead to the introduction of machinery not because its use is made profitable by the rise in wages, but because the wage increase augments the gain that could already have been secured.

The tendency that has been described may not always be realized. Particularly, the wages that certain employers have to pay may go up, while the wages paid to laborers that make machines may not rise. Thus the price of equipment would not rise, and hence it would be advisable to substitute machines for laborers in the plants under consideration. This is more likely to be true if machinery is imported into a given country than if it is produced in the country in which it is used, for in the case of two different countries the movements of wages may not be parallel. But as wages tend to move somewhat uniformly throughout an economic society, an increase in the rate of wages in plants that might use machinery would tend to be accompanied by an increase in the price of machinery, which would remove the advantages of substituting it for the laborers whose wages have risen. This would tend to be true since the rise of wages in the one group would tend to have its counterpart in a wage increase in the group that is employed in manufacturing machinery, and thus the cost of making machinery, and hence its selling price, would increase. This all depends, to repeat, upon the simple fact that machinery is really not substituted for labor; labor is used in a roundabout manner, first to produce machinery and then to use it.

The rate of interest rather than the rate of wages is of importance in determining the profitableness of using machinery as compared with the use of direct labor. The use of equipment normally calls for a larger supply of money in the conduct of an enterprise than does the use of labor service without machinery. Hence, as the rate of interest rises, the use of machinery becomes less economical than otherwise, and as the rate of interest falls it becomes more profitable than it was at higher interest rates. Further, of course, any improvement in the method of constructing machinery, or in its effectiveness, encourages its utilization because of the increased labor economy thereby made possible.

But, undoubtedly, the most significant factors influencing the extent to which machinery is used are found in the general characteristics of an economic society, rather than in rates of wages and interest. Knowledge, ingenuity, progressiveness, available markets, and a high degree of well-being that makes possible the devotion of labor to roundabout and time-consuming processes are of prime importance. The last-named factor may be phrased as the possession of an adequate supply of loanable funds, for loanable funds exist because individuals are not forced to use their money in buying the necessities of life. In these several respects there is marked contrast between the United States and India; and on the basis of these differences, the extensive use of machinery in the one country and the use of tools in the other can be explained.[1]

Goods as Savings. — The volume of goods which a society possesses at any one time may properly be described as the savings of the society, or as *social savings*. This term is often used in economic literature as if it applied only to the produced goods that are to be used in further production; but, certainly, consumption goods are also savings. Anything that has been produced and is not yet used up has necessarily been saved. Most consumption goods, however, are short-lived; food is conspicuously so, but houses and furniture are noteworthy exceptions to the rule. On the other hand, most forms of industrial equipment are relatively durable. Thus there is warrant for thinking of the savings of a society as being very largely represented by the productive equipment which exists at any one time. But, it must be remembered, these goods do not comprise the total savings, consumption goods must also be included.

Social and Individual Savings. — Saving on the part of the individual may take the form of the accumulation of money; the storing up of goods, such as supplies of food or seed; or the construction or purchase (that is, in effect, getting others to undertake the construction) of production goods or durable consumption goods. If the saving on the part of the individual increases the supply of goods, it will necessarily amount to social saving. If, on the other hand, individual saving takes the form of the accumulation of money, there are three possible situations. In the first place, if the individual merely hoards his money there is no resulting social saving. Secondly, if he should make a loan to a spendthrift — to one who spends it, for example, in giving a banquet — social saving would not result; although if the individual who loaned the money took ample security for the loan, the volume of his own savings would not be reduced. Thirdly, the loan of the money might be made to one who will hire laborers to erect a factory, build a machine, or construct a house, and thus social saving as well as individual saving would result.

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[1] For discussion of several different aspects of this subject, see article by the present writer, "The Rate of Wages and the Use of Machinery," in the *American Economic Review*, September, 1923, Vol. XIII, No. 3, pp. 461–465, and subsequent notes and articles on this topic in the same periodical, December 1923, June 1924, September 1926, March 1927, and December 1927.

Emphasis on Saving. — Bankers and other industrial leaders, and, as well, practically all persons who give advice in regard to economic conduct, emphasize the importance of saving. They extoll investing and decry spending. The implication is that there is no possible limit either to the desirable volume of industrial equipment or to the desirable degree of frugality on the part of individuals. Careful analysis shows this to be unsound. There can be no need for industrial plants if persons are not to use the products. It would be foolish indeed to build machines, to build machines *ad infinitum*, with no thought of ever using the product. Indeed, it is only because consumption goods are desired — because people do spend — that there is social justification, and monetary profit to individuals, in producing industrial equipment.

If all persons in the United States were to adopt the scale of living that prevailed one hundred years ago, there would be employment for but very little of the existing industrial equipment. Likewise, but little labor power would then be needed to supply the wants of the population. This suggests that the alternative to a high standard of consumption is not the building of more equipment, as is implied in the emphasis upon saving, but an increased amount of leisure. In other words, a working-day of abnormally short duration, if output per hour could be maintained at present standards, would amply supply the bare necessities of life.

The problem of saving versus spending assumes different proportions when looked at from the point of view of a single individual rather than of society as a whole. Extreme frugality on the part of all would make extensive saving unnecessary and impossible. But the frugality of particular individuals in a society of "spenders" gives opportunity to make individual savings, which to some degree, perhaps wholly, may amount to social savings. Those who save, build plants to supply those who wish to spend. Henry Ford, for example, has become one of the world's richest men because of two conditions: many people have wished to buy automobiles rather than save the price of them, and he has saved money and used it in supplying them with machines. The first of these two conditions is as important as the second. Ford's extensive plants have come because he could sell automobiles as well as because he was able and willing to save in order to build them.

As with an individual so with a nation. If the people of one nation are frugal and efficient, they may become very rich by supplying the less frugal people of other nations with the goods which they desire to consume. This would tend to give the business men in the one nation control over the resources and equipment that are located in the other nations, for the people in the spendthrift nations would tend to sell or mortgage their equipment and natural resources to the frugal persons from whom they purchased the consumption goods.

It is on the basis of the advantage which saving thus gives to particular individuals and nations that the emphasis upon the importance of saving mainly rests. Further, there is but little danger that a sufficient portion of the incomes of most individuals will not be spent for consumption goods, but there is always a likelihood that not enough will be saved. That is, the disposition of most persons is such that emphasis must be placed upon the importance of saving in order to promote rational conduct. The need of making provision for the "rainy day" can hardly be overemphasized.

Concentration of Wealth and Industrial Equipment. — The point is often made that great fortunes on the part of the few are necessary to the production of industrial equipment. It will be recalled that there are two conditions requisite to the construction of industrial plants in an individualistic society such as ours. Namely, some persons must have the ability and the desire to spend money for the products of such plants, and other persons, or the same persons, must have the ability and the willingness to save money for the construction of the plants. In the case of great fortunes, the second of these conditions is admirably fulfilled, for if the fortune is extremely large, to save all, or almost all of the income from it, is far more convenient than to spend all of it. But even such a situation will not lead to the building of plants unless there is sufficient buying power on the part of the many to purchase the product.

On the other hand, if there are no large fortunes, if, indeed, there is approximate equality of wealth throughout the society, and if this wealth is sufficient in quantity to provide a large volume of buying power, it may confidently be expected that a volume of saving sufficient to provide adequate means for the production of the consumption goods for which there is demand will be forthcoming. That the collection of the savings of many into funds with which to carry on large scale enterprises is by no means impossible is evidenced constantly in the volume of savings collected by banks and other savings institutions, and the extensive sales of stocks and bonds to the general public.

The Savings of Corporations. — One very important source of industrial equipment to-day is the savings of corporations. For the most part, corporations pay only a nominal rate of return or dividends to stockholders, regardless of the rate of income that is secured. The difference between these two items represents savings by the corporation. This saving largely takes the form of additions to equipment; but to some extent it is represented by stocks of raw material, finished goods, and, in some cases, cash in banks.

This process is often described by saying that the corporation "puts the money earned back into the business." It is perhaps better to say that the money earned is retained in the business. What really happens is that as money is received in excess of the amount needed to carry on the business of the corporation and pay a nominal rate of dividends, say 5 to 7 per cent, the extra amount is used to enlarge the business. The Ford Motor Company is a conspicuous illustration of the retention of earnings for the purpose of enlarging an enterprise. This mammoth business, save for a very small original investment, has been built entirely out of profits that have been saved by the corporation and used in the enlargement of the business.

Savings Institutions. — Institutions designed to collect the savings of persons who are not "in business," and make them available to business men for the conduct of their enterprises are of great importance. Savings banks, commercial banks, postal savings banks, building and loan associations, and insurance companies are conspicuous among such savings institutions.

The funds collected in this manner normally find their way into business enterprises through the managers of the savings institutions purchasing stocks and bonds issued by business concerns. The savings institution thus stands between the individual and the enterprise which uses his savings. And, incidentally, the institution thus assumes the risk that is involved in the investment.

Investment banks perform a similar function, but their manner of operation differs in that they first make the investment and then sell the securities which they receive to their customers, rather than first borrow from their customers and then invest the amount borrowed, as savings institutions do. The general effect is the same in either case. Many commercial banks do, in part, the business of investment banks. Brokers who sell stocks and bonds also play the part of financial middlemen in making the savings of individuals available for the use of business men.

Oversaving. — Rather than emphasize the need for saving money, certain writers insist that our economic society is forever being cursed by having an excess of savings, relative to the amount that is available for the purchase of consumption goods. The point made is that so much is saved that the remaining buying power is not sufficient to take from the market the consumption goods that are produced, and further that the savings are used to produce additional equipment which further augments the volume of consumption goods to be sold in relation to the volume of purchasing power than can be devoted to buying such goods. As a result, so the argument runs, business men are unable to sell at a profit the goods that they have produced, and after this has gone on for about a decade, business firms are so overstocked with goods that cannot be sold at a profit that prices are cut and business becomes disorganized. This disorganization of business is characterized by idle factories, unemployment, and great distress to the poorer classes. The period during which these conditions prevail is known as a business depression. This theory will be discussed in the chapter dealing with business cycles. It is sufficient at the present time to call attention to the fact that some students think that too much is saved in our society.

Whether the business depressions that appear so frequently are due to oversaving, it is significant to note that we do have an excess of industrial equipment relative to the use that we make of it. Our automobile factories are able to turn out almost twice as many cars as can be sold; the shoe factories produce 977,000 pairs of shoes per day, although they have a capacity of 1,750,000 pairs; and the annual consumption of sugar is about 4,000,000 tons, while our sugar refineries are equipped to produce 8,000,000 tons. The normal output of clothing could be produced with from 31 to 86 per cent less plant capacity than is available. The Portland cement industry since its beginning has been able at all times to more than meet all of the demands for cement. Normal requirements in 1921 called for 32,000,000 tons of steel, but the plants were able to produce 54,120,000 tons. Blast furnaces have so exceeded the need for them that the upkeep cost on idle furnaces has been estimated as averaging $79,000,000 per year for the past decade.[1]

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[1] Data from *The Tragedy of Waste*, by S. Chase, 1926, pp. 186, 187. Original sources cited therein.

This phenomenon of excess plant capacity in perhaps all, or at least in almost all, lines of industry is very interesting. It seems to indicate that, looked at as a whole, our society is not in need of increased savings. The further fact that we are now exporting large sums of "capital" each year also indicates a volume of production beyond the domestic demand for the goods that are produced.

"Capital" export does not, it must be noted, mean the sending of money abroad, nor necessarily the sending of industrial equipment. It means that goods of one kind or another are being sold abroad in excess of the goods that are being purchased from abroad and that the payment for the excess is being taken in bonds, notes, and other evidences of debt. Stated differently, this means that the people of this nation are producing goods not for their own use but for the use of the people of other nations. The foreign peoples who receive these goods may later produce other goods which will be shipped into this country in payment for these that we are now selling to them on credit. However, such payment, if attempted, will be vigorously opposed by many, perhaps by most, persons in this country on the ground that since our factories cannot sell at a profit in the domestic market all of the goods that they could produce, to permit foreign traders to ship in goods would "hurt business." There are many aspects to this question which cannot be discussed in this chapter, but, clearly, large shipments abroad on credit indicate an abundance rather than a shortage of equipment in relation to domestic needs. An important factor in explaining the existence of a surplus of equipment will be noted in the following paragraphs.

The Proportion of Economic Energy Used to Produce Industrial Equipment. — The popular impression prevails that a large part of the economic activity of a modern society is devoted to the producing of industrial equipment. An examination of the number of persons engaged in different occupations shows, on the contrary, that but a relatively small part of our economic activity is devoted to this end. Such a study made by the present writer a few years ago[1] showed that neglecting the persons engaged in producing the required raw materials, but slightly more than 1¼ per cent of the persons gainfully employed in the United States in 1914 were engaged in the production of factory machinery, and less than ¾ of 1 per cent in the construction and repair of factory buildings. Of the number in gainful occupations in that year, over 12,500,000, or one-third of the total, were in agriculture, forestry, and animal husbandry, yet only 51,425 persons were given by the census as engaged in the manufacture of agricultural implements. The wage earners already referred to who were engaged in the production of industrial equipment (factory buildings, factory machinery, and agricultural implements) and all of those who were engaged in the manufacture and repair of railway rolling stock, and the construction and repair of railway roadbed, not including the manufacture of steel rails, were estimated to comprise less than 4¼ per cent of our working population for the year 1914.

The statistics of our exports and imports of industrial equipment make it seem all the more startling that such a very small portion of our labor energy was devoted to providing us with equipment. For these figures show that for each of the three fiscal years ending June 30, 1913, 1914, and 1915, the value of our exports of machinery and agricultural implements was over twenty times the value of our imports of such articles.

The conclusion appears to be very safe that most of the energy of men is devoted to providing a living day by day, and but little to providing equipment for more effective work in the future. It is because of this fact that a nation recovers so soon after a devastating war, if the social and political conditions within it and neighboring nations permit individuals to resume their normal tasks.

PROBLEMS AND EXERCISES

87. Show that an axe enables one "to utilize more fully the forces and materials of nature."

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[1] "Production after the War," *Journal of Political Economy*, December, 1918, Vol. XXVI, No. 10, pp. 941–951.

88. Assume that a Robinson Crusoe has corn for planting and suggests two methods of planting and tending the corn, one of which is more roundabout than the other.

89. Describe a case in which roundabout methods are not advisable.

90. "Wages are low in India, so they do not use machinery there, but in America where wages are high, machinery is used extensively." Is the inference sound that the low wages in India prevent the use of machinery from being profitable? That the high wages here make the use of machinery profitable? Explain. Do high wages make labor-saving machinery more profitable than low wages would?

91. Explain fully just when the construction and use of a machine would save labor. Is it sufficient to consider merely the saving to the person using it? Explain.

92. Give a case of individual saving that is not social saving.

93. "The big problem of life is to find the golden mean." Illustrate. Is this applicable to the relation between saving and spending?

94. Bankers never cease to encourage people to exercise thrift, and are always looking for opportunities to make good investments. Are they inconsistent? Discuss.

95. Voltaire said that luxuries are the necessities of civilization. What did he mean? What relation does his point have to the practice of extreme frugality?

96. Is there any relation between oversaving and the reduction of taxes on the wealthy? Discuss.

97. "The rich people make our great factories possible." Discuss. Do poor people also make factories possible by saving? By spending? Explain.

98. Should you expect that "the destruction of capital" — the decline in the volume of industrial equipment that is in good repair — that usually accompanies a war would be made up quickly or very slowly? Discuss.

99. "The war left us with many evils. One result was the tremendous wastage of wealth. The people were required to recreate nearly one-fifth of our national resources. . . . The country needs every ounce of its energy to restore itself." President Coolidge, quoted in *The New Republic*, Aug. 27, 1924. What wealth did the war *waste* in America? What do you suppose the President meant in the reference to re-creating one-fifth of the national resources? Perhaps he meant that the "cost" of the war amounted to one-fifth of our national wealth. If so, does he refer to *money* cost or to *real* cost? What were the real costs in terms of our national resources? Was much or little energy needed to restore the nation to pre-war conditions? Discuss.

REFERENCES

An extended discussion of the relation of capital to wages is to be found in *Wages and Capital*, 1896, by F. W. Taussig. Alfred Marshall touches upon the implications of the relation between wage rates, interest rates, and the use of machinery in his monumental *Principles of Economics*. W. T. Foster and W. Catchings treat in a popular way the dangers of under spending in *Business Without a Buyer*, 1927. See also the footnote references.

CHAPTER IX

THE CAPITALIST AND THE ENTREPRENEUR

The persons whose savings were referred to in the preceding chapter are called capitalists. The function of the capitalist is so important in our economic society that it is desirable to give it further consideration at this place. The somewhat closely related function of the entrepreneur will also be discussed in this chapter.

I. The Capitalist

The Function of the Capitalist. — To carry on production in a roundabout way necessarily involves spreading the productive process over a period of time. And even aside from any degree of "roundaboutness," the production of economic goods takes time. Indeed, any act of man requires time for its performance, but in the production of food, the making of clothing, the building of houses, or the manufacture of pencils, books, or automobiles a great amount of time elapses from the moment when the first effort is made to produce the raw material until the article is in the hands of the final consumer. If the production of the tools and machines that are used is included in the calculation, as should properly be done, the time involved in the production of these goods is seen to be very great indeed. From the point of view of the length of time consumed in the various economic operations, our present society differs greatly from that of, say, a thousand years ago. After a machine has been completed, the time required for the manufacture of a product is very short as compared with the time required when manufacturing was a hand process, but including the production of the factories and their equipment the work processes are far longer than formerly.

In order that any appreciable length of time may elapse between the performance of economic activity and the use of the finished product, it is necessary that there should be a surplus in the form of food, or what amounts to the same thing, a surplus in the form of leisure. These two are identical because to have leisure means that one possesses sufficient food to maintain life, or that food may be easily procured. Without such a supply of food, there could be no leisure because all of one's time would necessarily be spent in the procurement of the means of subsistence. With such a food situation, one can turn aside from the task of securing sustenance and devote part of his energy to planting and tending a crop or to making a tool or machine that may not be completed until a distant date.

The original capitalists were those persons who thus either (1) saved up a supply of food and then lived upon this while they cultivated a crop or made a tool or performed some other task that did not at once yield a return in the form of food but that would later give them an increased supply of food or other commodities; or (2) used the leisure which they had because of an abundant food supply to produce equipment.

Every increase in labor efficiency, which has resulted from new methods, has permitted the application of labor to still more time-consuming or roundabout projects, and thus economic gains have tended to be cumulative. But, as in the beginning of industrial progress, it has been only because of the willingness of some persons to play the rôle of capitalist that the still further improvements were realized which the initial improvements made possible. As the illustrations already used make clear, the use of money is not necessary to the performance of the capitalistic function; money does, however, greatly facilitate the rendering of service by the capitalists. For convenience in discussion, this function will be further considered in terms of money.

Various persons in the economic society come into the possession of money; some of these spend their money in the purchase of consumption goods while other persons save theirs and with it hire laborers, or loan it to others who hire laborers, to engage in time-consuming processes, some of which may not yield consumption goods until after a very long period of time has elapsed. The capitalist thus transfers his money claims, with which he might purchase consumption goods, to laborers; and they by expending it with merchants procure the necessaries of life which will permit them to engage in work that does not at once issue into consumption goods. The laborers thus receive compensation at the time the work is performed, but the capitalist must wait for his reward until the services of the laborer become a usable or a salable product. In effect, the capitalist advances goods to laborers in anticipation of a return from their services at some future date. It is his function to save and to use his savings in the conduct of economic enterprises. He provides the *carrying power* that is necessary for the completion of time-consuming projects. But the capitalistic function is also performed in loaning to a spendthrift. That is, the assistance of the capitalist is necessary to the conduct of the time-consuming (roundabout) processes that are such a marked feature of our economic system, but his function is not restricted to such service. The essence of the capitalistic function is to use goods or money for future gain.

The capitalist as a capitalist always has an eye to the future; he builds railroads, constructs factories, prepares land, plants trees, loans money, all with a view to augmenting his wealth. It is only because of this disposition on the part of some persons that the extensive industrial equipment which we have to-day has come into existence. All persons are not inclined to be capitalists. Some think only in terms of the present. They adjust their lives to the philosophy, "Eat, drink and be merry for to-morrow we die." While it is necessary that persons be able and willing to spend money for consumption goods in order to justify others in building industrial equipment, as was developed in the preceding chapter, the point here is that saving — carrying power — is indispensable as a basis for the economic progress that comes through improved mechanical processes.

The capitalists have not been responsible for all of the improvements that have been made in economic processes. Some new methods were the result of chance discoveries rather than of patient work on the basis of savings. Further, economic efficiency is not necessarily increased as capital accumulations make it possible to lengthen the time of an economic project, but on the whole an increase in the degree of roundaboutness throughout industry has made it possible to utilize more effectively the forces and materials of nature. In other words, it has tended to increase the economic efficiency of human beings. Such improvements have obviously made possible a higher standard of living; they have made it possible to produce and use comforts and luxuries in addition to the necessities of life. And in providing these improvements, to repeat, the services of capitalists have been necessary. In everyday speech, a capitalist is one who uses a great deal of money in this way, but strictly speaking, anyone is a capitalist who has money, however small the quantity may be, and loans or invests it with the idea of thereby securing an income.

The Payment of the Capitalist. — Strange as it may seem, many persons have objected to paying the capitalist for the service which he renders. He has, however, all through the ages received payment. This has been in the form of what is called interest. The economic return which is properly called profit is received in connection with the performance of another function (that of the entrepreneur) which will be described presently. The reason that interest has always been paid is that there has at all times been a demand for the savings that people have been willing to make. This demand has come in part from persons who wished to borrow in order to buy consumption goods, but the principal source of the demand for loan funds, particularly since the beginning of the Industrial Revolution, has been the business men. Their desire to borrow has been due to the fact that it has been profitable to use money in business.

The total economic product, as suggested in the preceding chapter, is produced by labor, using the term broadly to include mental as well as manual labor services. The interest which the capitalist receives comes from the total product, and thus because of this deduction, not to mention others, labor gets less than "the full value of its product." It is on the basis of this statement of the case that some persons object to the payment of interest.

It must be remembered, however, that the capitalist pays the laborer in advance of the sale or use of the product that comes from the labor services. If a laborer, for example, planted a fruit tree, he would be entitled to the fruit which the tree bears, if he waited until that time, barring any question as to the original ownership of the tree or of the land upon which it is grown. But clearly the tree at the time of planting is not worth as much as the fruit will be worth as it ripens in the successive seasons. If the tree will bear five bushels per year for a period of ten years, beginning with the second year after it is planted, and if we may assume that no labor need be expended in caring for it, the full product of the labor expended in planting the tree will be fifty bushels of fruit; but, obviously, if the laborer sells the tree at the time of planting, he will not get the equivalent of fifty bushels. The person buying the tree will not pay this much for it, because he will have to wait two years for the first fruit and twelve years for the last fruit that he is to get. He will at the time of planting buy only at a discount the fruit which the tree is expected to yield. This illustration, it will be noted, assumes that there is no uncertainty as to the amount of fruit that will be borne by the tree in the different seasons. This element in the situation will be discussed presently.

If the laborer is paid wages for setting out the tree, this is equivalent to his selling the tree just after he has planted it. He gets an immediate income, but the man who pays him wages must wait until later for the income that he is to receive. This illustration is very characteristic of business processes. Those who do not wish to wait or who cannot afford to wait, sell their products and labor service for less than their future value; and conversely the business men who buy goods and services, pay less than their final value because it cannot be realized until some future time. The difference between such present and future value is interest, neglecting the element of uncertainty, or risk.

The Rate of Interest. — The percentage relation between the capital sum and the interest income is called the rate of interest. The fluctuations in the rate of interest, together with the variation in the prices of consumption goods, is within broad limits an important element in determining the volume of capitalists' services (savings) that will be forthcoming; or, in other words, in determining the relation between spending and saving; between the volume of consumption goods and the volume of production goods. Or to put the matter still differently, it is thus in part, at least, that a balance is held between the amount of labor service used in extending or maintaining time-consuming projects as compared with the amount that is spent in using equipment and in satisfying human wants directly.

Assume that almost all of the people of a community should rather suddenly desire to "live better" — to use more and better consumption goods, such as clothing, house room, house furnishings, automobiles, and theatrical productions — rather than to continue to save as much as they have been saving. The prices of consumption goods would rise in response to this increased demand. Manufacturers and other business men would wish to enlarge their plants to supply this increase in demand. To do so it would be necessary for them to have money with which to employ persons to do this work. Further, it would be essential that existing plants should be repaired and machinery replaced from time to time. This also would require the use of money. But the increase in spending would mean that less money was being saved and consequently that business men would find it difficult, if not impossible, to get the money that they required to repair and expand their industrial plants. Accordingly, they would increase their bids for the loan of money, that is, the rate of interest would rise. Consumers would then find that the prices that they were paying in spending their money were increasing, and that the rate of interest which they could get if they would save their money was also increasing. As a result, some persons would be encouraged to reduce their expenditures and increase their savings, and a new balance would be struck between spending and saving.

On the other hand, if there should be an increase in the desire to save, a decrease in the desire to "live well," in the present, anyway, more money would be available for the use of business men in extending their operations, and then more labor would be devoted to the production of industrial equipment. This would lead eventually to a still larger output of consumption goods. But since there is, by assumption, a decrease in the demand for such goods their prices would fall. This would mean that the profits of business men would decline and they would then reduce their bids for the use of money funds. The fall in the price of consumption goods and the reduction in the rate of interest would encourage persons to increase their expenditures and to reduce their savings. Thus a new balance would be established between spending and saving, that is, between the volume of labor service that is applied in maintaining or extending industrial equipment on the one hand, and in using the present equipment and directly satisfying wants on the other.

To be sure, not all of the money borrowed at interest is used in the construction or maintenance of industrial equipment. Some is used in employing labor to use equipment and some in the purchase of consumption goods. Further, the effect of the rate of interest upon the savings of all individuals is far from uniform. Then, too, the policy of the banks is very significant in determining the volume of money that is available for the use of business men. Finally, as suggested at the beginning of this discussion, it is only within rather broad limits that variations in the rate of interest and in the prices of consumption goods alter the spending-saving habits of the people of a community. Restrictive forces tend to prevent adjustments from being made as freely and nicely as has been assumed. But, broadly speaking, the fluctuations in the rate of interest and the variations in the prices of consumption goods alter the amount spent and the amount saved and thus tend to establish a balance between the volume of equipment and the volume of consumption goods. The payment of the capitalist (the rate of interest) will be more fully discussed in a later chapter as one of the shares into which the economic income of a society is divided. The discussion in this chapter has been from the point of view of the production of industrial equipment.

II. The Entrepreneur

The Function of the Entrepreneur. — If an industrial project is to be carried on, it is not only necessary that certain persons shall be willing to labor and others willing to lend the money with which the laborers may be hired and materials purchased, but it is also essential that someone be willing to undertake the risk of the enterprise. There is almost always some chance of loss in any undertaking. This risk of loss must be borne by some person, or group, who assumes responsibility for the enterprise. The one who thus takes the responsibility for an economic project was very fittingly designated by the early English economists as an *undertaker*. But the use of this term in another sense made it necessary to use some other word in referring to this economic function, and the word *entrepreneur*, which is the French equivalent for *undertaker*, was employed, and has since been rather generally used by English and American economists.

An entrepreneur as well as a capitalist saves and uses his money in business with a view to future gain. The vital difference between the two is that the entrepreneur uses his own money and also money borrowed from capitalists in a business venture, while the capitalist, as a capitalist, merely loans his money to others. The entrepreneur bears the risk of losing what he invests as he can have no security that his venture will succeed; but the capitalist has the promise of the borrower, who is usually an entrepreneur, that the loan will be repaid. The capitalist may lose his money, but his risk is normally far less than that of the entrepreneur. The entrepreneur is thus a capitalist plus. He saves — he postpones consumption — he waits, as does a capitalist — but he uses his money rather than loans it.

An owner of a farm, for example, who is himself the farmer, is an entrepreneur, while the one who owns a mortgage against the farm is a capitalist; the purchaser of common stock in a corporation is jointly with other similar purchasers an entrepreneur, but the purchaser of bonds is a capitalist. The difference between the entrepreneur and the capitalist is in many instances very indistinct, and this is especially true in the case of the owners of the securities of corporations, as will be noted in a later chapter, but the difference between the two functions is clear enough in a sufficient number of cases to warrant the classification. The services of the entrepreneur are very significant. Indeed, economic activity is impossible without the exercise of the entrepreneur function by an individual, a group of individuals, or the state. Responsibility for an undertaking must be assumed in every case.

The Payment of the Entrepreneur. — The individual entrepreneur receives payment for his services in the profits of his undertaking, if there are any profits. Strictly speaking, an amount should be deducted from the net receipts of an entrepreneur sufficient to pay for the labor service which he renders in connection with the enterprise and for interest on the money belonging to him which he uses in the business, in order to arrive at the profits that are the reward for his services as an entrepreneur.

As in the case of the capitalist, many persons object to paying the entrepreneur. This position, however, cannot be successfully defended. Profits come, normally, because an entrepreneur foresees the demand of the community more accurately than other entrepreneurs or other persons who might become entrepreneurs; or because a particular entrepreneur uses methods that give him an advantage over other entrepreneurs. To act in either of these two ways is to perform a service that deserves a reward. Occasionally, of course, to supply a demand may not be socially desirable, and also not every method that will permit an increase in profits is desirable. But generally speaking, the anticipation of wants and the cheapening of processes are in the interest of economic welfare. The lure of profits promotes the realization of these ends.

If profits were prohibited, the private conduct of industries would undoubtedly be given up in almost all cases. The state could not undertake to make up all of the possible losses that persons might have in industries; and entrepreneurs would certainly not venture their wealth if faced with the chance of loss and with no chance of gain. The alternative to profits is then government ownership and operation of all enterprises. Even this, however, would not eliminate the risks for which the entrepreneur is paid, nor the payments that are made to him. Under government enterprise a greater charge would have to be made for the products of the lines of industry in which the hazard is great, as in the growing of certain crops, than would be made for the products in less hazardous fields of endeavor. Justice among consumers would make it necessary to do this.

Considered as a deduction from the "full product of labor" profits may also be justified. Laborers not only wish to be paid at the time they perform labor services, they also prefer to be sure of receiving wages rather than to take chances on getting an income from the profits that may accrue from a business venture. In the fruit tree illustration used above, the risk that it might not grow, or might not bear fruit, or that the fruit could be sold only at a very low price, was eliminated by assumption. To include the risk factor which would certainly be present, it is clear that if the laborer who planted the tree retained possession of it he would not only have to wait for his income from it, but he would also run the risk of not getting anything from it. But if he sells the tree at the time of planting — if he sets out the tree in return for the payment of wages — he escapes both the waiting and the risk that are involved. The buyer of the tree — the payer of the wages — does not then exploit the laborer if he pays him less than the final full value of his labor, which is, in this case, the value of the fruit as it ripens year by year. If the tree should not yield the amount of fruit that it is reasonably expected to bear, or if the price of fruit should fall unreasonably, the laborer would then have been paid more than the full value of his product.

In many cases, entrepreneurs make undue profits; and in others, they pay wages that are too low. Sometimes these two conditions are found together. But despite such instances there can be no question as to the general justification of profits, nor, what amounts to the same thing, the practical importance of the function of the entrepreneur.

Profits are not only the means by which entrepreneurs are rewarded. At the same time they tend to determine the relative amount of entrepreneur services that will be forthcoming and its distribution among the different industrial fields. If profits are unduly high, more persons are encouraged to undertake the responsibility of conducting enterprises, and this incidentally tends toward a reduction of profits. On the other hand, a marked curtailment of profit tends to discourage persons from assuming the entrepreneur function, and this eventually results in raising profits. Similarly, the profits which prevail in the different lines of industry tend to determine the relative supply of entrepreneur services in the different economic fields, for entrepreneurs tend to enter those lines of work in which the rate of profit is relatively high. As was remarked in regard to the rate of interest, profits will be more fully discussed later as one of the shares in the distribution of income.

PROBLEMS AND EXERCISES

100. Describe the function of capitalists in connection with the building of a railroad.

101. Assume that you possess $100. (*a*) Trace in detail how, through your becoming a capitalist, this money would be used. (*b*) Describe the utilization of this money if you do not become a capitalist in respect to it.

102. (*a*) From the point of view of abstract justice should the capitalist be paid for his services *as a capitalist?* Illustrate. (*b*) From the point of view of the practical conduct of an economic society should the capitalist be paid for his services *as a capitalist?* Illustrate.

103. Apply the tree illustration of the text to the construction of a factory building.

104. Assume a case in which you were an entrepreneur. Describe it. A case in which you were solely a capitalist. Describe it. Solely a laborer. Describe it. (Be sure to distinguish carefully among the three cases.)

105. Give an illustration to show how entrepreneurs are paid.

106. What condition in the prices of consumption goods and in the rate of interest will tend to indicate that a society is relatively undersupplied with industrial equipment? Relatively oversupplied?

107. Interest rates in the western part of the United States have almost always been higher than interest rates in the East. How do you account for this? What should you expect to have been true of the prices of consumption goods in the two places? Why?

108. (*a*) Name a time-consuming process that has proved to be socially advantageous. Why has it? (*b*) Suggest a time-consuming industrial process that would not prove to be profitable.

109. Why have "economic gains tended to be cumulative"? Illustrate by reference to a watch.

110. Do you believe that there will be relatively more entrepreneurs in 1950 than in 1928? Why? That entrepreneural ability in 1950 as compared with that of 1928 will be more or less well paid? Why?

111. "The laborers produce all that is produced; they should have it." Discuss, making at least two points.

112. Which tends more to be overpaid, underpaid, or correctly paid — the capitalist; the entrepreneur; the laborer? Why do you think so?

REFERENCES

The time factor in capital is carefully analyzed in F. M. Taylor's *Principles of Economics*, Chapter V. The function of the entrepreneur in the light of the present industrial development is treated by C. W. Tuttle in the *American Economic Review*, March 1927, Vol. XVII, pp. 13–26.

CHAPTER X

SPECIALIZATION

I. Trade and Specialization

In the preceding chapter of this book the point has been emphasized that our economic society is one in which the institution of private property prevails and in which there is a high degree of coöperation among the persons who make up the society. These two conditions, private property and coöperation, cannot exist unless trade be carried on. For with private property, different persons cannot specialize at different tasks and thus coöperate in jointly serving their economic interests except on the basis of a mutual exchange of their services and products. There is specialization in an army, or in a communistic society, of course, without the existence of trade relations, but this specialization is brought about by authority. In a society in which the principle of freedom in economic affairs prevails, specialization is possible only if there is an exchange of products and services. Specialization and trade in a society such as ours are thus related as fundamentally as are the two sides of a coin. The greater the ease with which products or services can be exchanged, the greater is the degree of specialization that is possible.

Kinds of Specialization. — Specialization takes several forms. Probably the form that developed first historically was specialization by trades. In this form of specialization one worker completes the entire series of work processes falling to his lot. Thus a village blacksmith devotes himself entirely to blacksmithing and performs all of the different kinds of work that fall to a smith, such as horseshoeing, welding, sharpening plowshares, etc. A farmer is a specialist of this kind for he works at all of the different activities that make up farming. Likewise the small town doctor is a trade specialist for he treats every type of ailment.

Another form of specialization is that growing out of the division of production into different stages. Thus a newly constructed automobile in the hands of the consumer represents the culmination of production by definite stages, reaching from the extraction of the raw materials and their refining to the construction of the machine and its distribution to the consumer. The workers in each of the stages of production confine themselves to the type of work falling in that stage. Thus the miners of the raw ore do nothing but mine ore; those who transport the ore are engaged only in transportation; and so on.

Geographic specialization is the third form and springs largely from the peculiar characteristics of given geographical districts, causing the people therein to devote themselves largely to one or a few types of production. Thus the southern states are devoted largely to cotton growing, the northwestern states to wheat growing, certain Massachusetts cities to shoe manufacturing, and certain of the western states to mining activities.

One of the outstanding developments of the Industrial Revolution is the fourth type of specialization, known as specialization by tasks. It reaches its most complete expression in a plant such as the Ford Motor Company, where 95 per cent of the workmen do very simple tasks. Each one of these tasks is reduced as nearly as possible to only one movement. One man, for example, will do nothing but insert a particular bolt, while another will do nothing but fasten a nut to this bolt. This specialization by tasks is rapidly increasing to-day with the extension of large scale production and the utilization of automatic machinery.

To say that men specialize extensively at various tasks, trades, and occupations is merely to repeat the idea, expressed in previous chapters, that there is a high degree of interdependence among the various workers to-day. *Coöperation*, *interdependence*, *specialization*, and *trade* are all indicative of the same fact of our economic life. While this aspect of economic life is not of recent origin, but is very, very old, yet the degree to which men coöperate by specializing and then trading their products is far more marked to-day than ever before in the world's history.

Transportation. — Very obviously the extent to which trade can be carried on, and thus the extent to which men may specialize in their economic tasks, depends upon the available facilities for transportation. As Adam Smith put it, "The division of labor is limited by the extent of the market."

Waterways naturally played a most important part in the developing of commerce until the time of the railroad. The reason for this is made clear by the following quotation from Smith:

> "As by means of water-carriage a more extensive market is opened to every sort of industry than what land-carriage alone can afford it, so it is upon the sea-coast, and along the banks of navigable rivers, that industry of every kind naturally begins to subdivide and improve itself, and it is frequently not till a long time after that that those improvements extend themselves to the inland parts of the country. A broad-wheeled waggon, attended by two men, and drawn by eight horses, in about six weeks' time carries and brings back between London and Edinburgh near four ton weight of goods. In about the same time a ship navigated by six or eight men, and sailing between the ports of London and Leith, frequently carries and brings back two hundred ton weight of goods. Six or eight men, therefore, by the help of water-carriage, can carry and bring back in the same time the same quantity of goods between London and Edinburgh, as fifty broad-wheeled waggons, attended by a hundred men, and drawn by four hundred horses. Upon two hundred tons of goods, therefore, carried by the cheapest land-carriage from London to Edinburgh, there must be charged the maintenance of a hundred men for three weeks, and both the maintenance, and, what is nearly equal to the maintenance, the wear and tear of four hundred horses as well as of fifty great waggons. Whereas, upon the same quantity of goods carried by water, there is to be charged only the maintenance of six or eight men, and the wear and tear of a ship of two hundred tons burden, together with the value of the superior risk, or the difference of the insurance between land and water-carriage. Were there no other communication between those two places, therefore, but by land-carriage, as no goods could be transported from the one to the other, except such whose price was very considerable in proportion to their weight, they could carry on but a small part of that commerce which at present subsists between them, and consequently could give but a small part of that encouragement which they at pres-

ent mutually afford to each other's industry. There could be little or no commerce of any kind between the distant parts of the world." [1]

Smith's book, it will be remembered, was published in 1776, fifty years before the advent of the railroad. To-day, land transportation on account of the railroad and the automobile is remarkably cheap. Indeed, it is so cheap that it is generally preferred to water transportation within most areas where both might be used, as, for example, along the Ohio, Mississippi, and Missouri rivers. The cost of transporting a ton of goods a mile in many sections of the country, as stated in earlier chapters, is less than the price of a two-cent postage stamp. This has given to the inland areas a degree of specialization or division of labor which the great Scotch economist of the eighteenth century saw restricted almost entirely to the regions adjacent to seaports and navigable rivers.

Not only has inland transportation been greatly improved since 1776, water transportation, too, has been greatly facilitated. At the time that Smith was writing, the use of steam as power was unknown, and likewise the use of iron or steel in the construction of vessels. Also, special loading devices, which together with the steam-propelled steel vessel make it possible to ship wheat on the Great Lakes, for example, a distance of 900 miles at a cost of 41 cents per ton, are of recent origin. The barriers of distance have, relatively speaking, been almost entirely removed — markets have been made incredibly wide. It is because of this that districts and entire countries are able to devote themselves so exclusively to the performance of a very few kinds of work.

Similarity of Culture. — The width of markets depends not alone upon agencies of transportation but, as well, upon a similarity of culture among the people of different sections and of different nations. It is only as customs are similar — as consumption habits become the same — that it becomes possible to have wide markets.

Transportation is, of course, an important factor in the promotion of a uniform culture among otherwise diverse peoples.

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[1] Adam Smith, *The Wealth of Nations*, 1776, Bk. I, Ch. 3.

Communication may also be said to be a factor of great importance in this particular. Communication is, in large part, dependent upon transportation, for by means of transportation facilities, travelers and traders, and books and papers make the habits of one people known to another. But aside from this, similarity of language or knowledge of different languages, and specialized instruments of communication such as the telegraph, telephone, and radio all tend toward the widening of the markets of the various districts that are affected.

Law and order and the faithful performance of contracts are also vital to the extension of trade and the development of specialization.

Large Scale Production. — Large scale production, which is made possible by the extension of markets, permits a high degree of specialization within the work process. This was referred to above as the specialization of tasks. This point was neatly illustrated several years ago by Professor Commons in a discussion of the meat packing industry. He said, in part, as follows: "It would be difficult to find another industry where division of labor has been so ingeniously and microscopically worked out. The animal has been surveyed and laid off like a map; and the men have been classified in over thirty specialties and twenty rates of pay from 16 cents to 50 cents an hour. The 50-cent man is restricted to using the knife on the most delicate parts of the hide (floorman) or to using the ax in splitting the backbone (splitter); and wherever a less skilled man can be slipped in at 18 cents, 18½ cents, 20 cents, 21 cents, 22½ cents, 24 cents, 25 cents, and so on, a place is made for him and an occupation mapped out. In working on the hide alone there are nine positions at eight different rates of pay. A 20-cent man pulls off the tail, a 22½-cent man pounds off another part where the hide separates readily, and the knife of the 40-cent man cuts a different texture and has a different 'feel' from that of the 50-cent man. Skill has become specialized to fit the anatomy."[1]

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[1] J. R. Commons, *Trade Unionism and Labor Problems*, 1905, p. 224. Article appeared originally in the *Quarterly Journal of Economics*, Vol. XIX, 1904, pp. 1–32.

The contrast between the specialization which Commons describes and that which is found in a small slaughter house is, of course, very marked. Further, large scale operations encourage managers to devise specialized machinery which permits the specialization of tasks to be developed to a high degree, as was indicated above in the reference to the Ford Motor Company.

Cities and Specialization. — Another condition that results from specialization and also makes possible the extension of specialization is the modern city. Professional men, artisans, and tradesmen of all kinds are able to find a wide market for their services and wares in a city, and hence are able to devote themselves to a narrow specialty.

Money and Exchange. — The direct exchange of goods for goods is called barter. Trade takes this form in primitive communities. But obviously, there is a marked limitation to the carrying on of trade by barter. Such a method means that there must be a fourfold coincidence — that a person who possesses corn and wishes to trade for a wagon must find another person who possesses a wagon which he desires to exchange for corn. The restriction which barter thus imposes upon the exchange of goods leads very early in the experience of most peoples to the utilization of a "medium of exchange," that is, to the use of money. Money makes it possible for one person to sell his product or his services and then buy the things that he desires from the persons who possess them. Trade and, hence, specialization are accordingly greatly facilitated by the use of money. Without money it is inconceivable that there could be a degree of specialization at all approaching that which prevails with us to-day. It is one of the most important single agencies in our economic society: "It is one of the greatest inventions of all ages."[1]

The importance of money sometimes leads to erroneous conclusions concerning its nature. For example, expenditures for public improvements have been defended on the ground that if the money is spent within the country there is no loss, even if the improvements are worthless; or during wars, and as well at other times, the issuance of paper money by the government has been advocated as a means of reducing, or eliminating entirely, the cost to the nation of doing the task that is to be done. The fact that money is a medium of exchange, that it is merely a means of facilitating trade, and that exchange among a large group of persons is fundamentally barter, should prevent one from making such statements. Clearly, if labor and materials are used in constructing a dam, or dredging a river, or erecting a fortification, or bombing an enemy city, a social cost has been incurred, regardless of how the money that was expended was secured, or where it was spent; and if the product is useless, then there has been an unprofitable — an unwise — use of labor, service, and materials. That is, labor and materials in such a case are unwisely exchanged for the product that is secured.

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[1] O. F. Boucke, *Principles of Economics*, 1925, Vol. I, p. 106.

Confusion in thought relative to the nature of trade and money has also led to error in comparing domestic with foreign commerce. During the period of mercantilism, the argument was made that domestic trade could not enrich a nation because it did not increase the amount of gold and silver bullion within the country. This argument has been repeated occasionally since that time. But gold and silver when used as money are only means for the procurement of goods. While a supply of money in a community is vital to the efficient conduct of enterprise, a point can easily be reached beyond which it is far less advisable to increase the supply of money than the supply of goods. Indeed, it is possible that conditions may be such that an addition to the supply of money will be positively detrimental to the welfare of a society, as will be more fully noted in a later chapter.

But entirely aside from any consideration of the supply of money, it follows from what was said at the beginning of this chapter that domestic trade is a necessary part of the process of specialization by which an entire nation gains the advantages that come from utilizing the resources of the various regions of the country and the specialized ability of the different persons within its borders. A very considerable factor in making possible the high standard of living in the United States has been the free and unrestricted trade among all the parts of the extensive area of the nation.

Credit Exchange. — Trade may also be carried on by means of credit, that is, without the use of money. Indeed, a very large part of the exchange transactions in the United States while being in terms of money do not involve the use of money. They are credit transactions. Some credit transactions, however, may mean only the postponement of money payment and thus are not complete credit transactions. This is true of a large volume of exchanges in the United States to-day.

The simplest case of the completion of an exchange entirely on the basis of credit would be a situation in which each of two persons sold goods to the other on credit — the two accounts finally exactly balancing. A cancellation of the two debts would then be possible. In that way the exchanges would have been conducted entirely on credit.

Such a case is illustrative of what may be called postponed barter. Due to the difficulty of carrying on exchange by barter, this use of credit cannot be of much consequence. But if a large number of traders could pool their debts — their credit claims — upon each other, it would be possible for them to buy and sell freely among themselves and to make settlement in large part at least by mutual cancellation of debts. That is, *A* may owe *B*, while *B* owes *H*, *H* owes *Z*, *Z* owes *C*, and *C* owes *A*. If each of these debts was for the same amount, the cancellation of all of them would be satisfactory to all of the claimants, and this would mean that the transactions had all been carried on and settled by means of credit — without the use of money.

Banking institutions make it possible for the debts of buyers, or credits granted buyers by sellers, to be settled by mutual cancellation somewhat after the manner of the illustration just given. Firms and individuals having accounts (money) in banks usually pay their bills with checks, and for the most part the sums specified to be paid are not drawn out in money but are transferred through a process of cancellation from the account of one person to that of another person, the two accounts often being in different banks. This feature of our economic life will be more fully discussed in the chapters devoted to money and banking.

When Is Specialization Advisable? — The prices that prevail indicate when specialization is advisable to an individual or a group of persons, if the largest economic gain is to be secured. If a man can earn $5000 practicing law, while his services as a stenographer would command only $2500, it is clearly advisable for him to devote himself exclusively to the work of a lawyer rather than spend any part of his time at stenography. In other words, it is better for him to specialize at the work of a lawyer and hire a stenographer rather than attempt to do such work for himself. It is on the basis of a similar common-sense comparison among different alternatives that most individuals choose a specialty and devote themselves to it.

But sometimes this simple price test is abandoned in popular discussion and the position is taken that whether specialization is advisable depends upon whether one is more efficient than another at a given task. Thus in the case of the lawyer this position would be that if the lawyer is more efficient as a stenographer than is the person whom he hires, it will then be better for him to do his own stenographic work. A simple illustration, however, will show that such a test would not guide the lawyer to do the work that will give him the largest economic income. He may be a very efficient stenographer, in fact, better than anyone else; but he may also be an efficient lawyer. While he may not be among the best lawyers, he may be good enough so that he can make much more at devoting himself to legal work than he can if he works at stenography either all of the time or only part of the time.

The choice turns, then, not upon a comparison of the relative efficiency of different persons at a given task, but upon the relative efficiency of one person at different tasks. This principle is often stated in terms of costs. If the lawyer can make ten dollars per day as a lawyer, then if he turns to stenography for a half day, the cost to him of the stenographic work which he does will be five dollars. If he can hire someone to do this work in a day's time at the rate of four dollars per day, he will find it advisable to hire the work done, even though it takes the stenographer all day to do what he could do in half a day. The *comparative costs* to the lawyer of the two ways of doing the work would be unequal in this case. The lesser of the two would be incurred when he hires someone to do the stenographic work, while he devotes himself to legal affairs.

There may, of course, be considerations other than that of economic gain in determining the advisability of specialization. Many men prefer to do several different tasks rather than only one. Disinterested observers insist that the extreme specialization that is so characteristic of our society to-day is detrimental to welfare. Assuming that there is a net advantage in favor of our prevailing high degree of specialization, there can be no question that it involves a cost in well-being to many persons by forcing them to engage in repetitive operations that are very monotonous.

Trade Compels Men to Specialize. — Exchange relations not only make it possible for men to specialize at various tasks, it forces such specialization upon them. In the case of the lawyer considered above, it is necessary for him to specialize if he is to serve his economic interests. He, however, might choose to do his own stenographic work and make less money than he could make by devoting himself more exclusively to the practice of law. But in the case of different geographic regions there is but little, if any, choice in the matter of specialization so far as most business men are concerned. In New England, for example, it is economically impossible for very much wheat to be grown. Trade relations with the Northwest force the people of New England to do something other than raise wheat. Let us assume that men can make four dollars per day working in manufacturing plants in that region. Farmers must then pay at this rate to get men to work in the fields. But at this rate per day it is impossible, in view of the low soil fertility in New England, for farmers to produce much wheat and stay out of bankruptcy. Their expenses per bushel would be in excess of the price that they could get in view of the competition of the wheat producers of the Northwest. And the expense of raising wheat, be it noted, depends upon what can be made in the manufacturing industry. Trade relations thus force the people of New England to specialize very largely at manufacturing and to purchase their wheat from outside their borders.

This situation can easily be stated in terms of comparative costs. The comparative costs to the people of New England of the two ways of getting wheat — raising it themselves or producing something else and then buying it — are unequal with the lesser of the two being in the method of purchase with money secured by the production and sale of something else. Also, of course, the comparative costs to the people of the Northwest of the two ways of getting wheat are unequal, but in this case the lower cost is incurred if wheat is produced rather than purchased with the proceeds of some other line of production. Likewise, the comparative costs of the two methods of getting shoes are different to the people of these two regions — being lower to the people of New England if shoes are produced, and lower to the people of the Northwest if shoes are purchased with the income received from wheat farming.

Further, even if one of these two communities were superior to the other in the production of both of these commodities, specialization would be advantageous for this community if it were more superior in the producing of one commodity than in the producing of the other, as was shown above in the illustration of the lawyer-stenographer. A further illustration is perhaps in point.

Suppose that a region such as California is superior to other regions in the manufacture of shoes, and is largely engaged in that specialty. Suppose, further, that it is then found that the region is unusually well adapted to the growing of fruit. It would then, we may assume, be more efficient than other regions in the production of both shoes and fruit, but relatively more efficient in the production of the latter. This would then tend to cause all persons engaged in the shoe business to leave that occupation and begin growing and shipping fruit. In terms of wages, the superiority at shoe manufacturing may be assumed to have been such that high wages were paid for the labor expended, in order, of course, to attract laborers to this field of work. But the profitableness of growing fruit, when this industry develops, will be such that wages above those paid in the manufacture of shoes will be offered in the fruit industry. Wages must then be increased in the shoe industry, because shoe manufacturers will have to pay the wages which can be paid in the fruit business. Such wages, we may assume, will not permit the manufacture of shoes at a profit. The expense of shoe manufacture will thus have become too great, as a result of the fruit business, to permit its continuation. The comparative costs of getting shoes by producing them or by producing fruit and buying them will then be unequal, with the lesser cost being incurred in case the shoes are purchased with the returns derived from the fruit industry.

International Trade. — Fundamentally, international trade does not differ in the least from local or domestic trade. It merely means that economic coöperation is international and not simply local or national; or, in other words, it means that the principle of specialization has been carried farther than would have been possible if trade had not become international in scope.

International trade is promoted by exactly the same forces that prompt the exchange of domestic goods. Traders in Ohio, for example, are alert for opportunities to buy the goods they handle at the lowest possible prices. If they find that firms in Michigan can furnish goods to them at a better rate than Ohio firms, they will buy in Michigan, and, accordingly, the firms located in Ohio may be forced to alter their lines of production. Similarly, if these same traders can buy certain goods abroad more cheaply than they can buy them at home, they will be inclined to take advantage of the opportunity which is thus afforded. Some American firms may then find themselves unable to sell the goods which they have been producing and will thus be forced to specialize in some other line of work. Just as trade between New England and Minnesota makes it economically impossible for the people of New England to raise wheat and for the people of Minnesota to manufacture shoes, so foreign trade makes it impossible for producers in each country to engage in particular lines of work. Foreign trade, as well as domestic trade, not only gives localities and persons opportunities to specialize; it forces specialization upon them.

The discussion above relative to a difference in the comparative costs of getting an article by producing it or by purchasing it with another product is especially applicable to the question of foreign trade, for it is usually in regard to foreign rather than to domestic trade that the point is made that a degree of efficiency in one country beyond that of another country warrants the production of the goods in question in the one country. The analysis already given shows the fallacy of this position. The illustration relative to the manufacture of shoes and the growing of fruit is applicable to the principle of trade relations between any two countries.

The remark is often made that it is necessary for America to establish foreign trade relations in order that farmers and manufacturers may dispose of their "surplus products." This suggests the idea that producers somewhat accidentally find themselves possessed of a surplus, as if a farmer planned to raise a thousand bushels of corn to feed his stock and then through good fortune got fifteen hundred bushels, thus having a surplus of five hundred bushels. The so-called surpluses of American producers are not, however, the fruit of happy accident. They are the designed results of specialists, and are not properly to be thought of as surpluses at all.

The question as to the conditions under which international trade should be restricted, if at all, cannot be discussed in this chapter, but will be given special consideration later. Whatever restrictions may be advisable, it must be remembered that the fundamental character of foreign trade is identical with that of domestic trade, namely, it is a device for securing coöperation through the promotion of specialization.

Dependence of Communities Upon a Specialty. — In deciding upon the economic advisability of specialization, it may be very necessary for communities, or individuals, to consider long-time results rather than those accruing over a short period of time. A community that is devoted to one line of work may suffer greatly at certain times because of a misfortune that applies to that business. The old adage as to the inadvisability of putting all of one's eggs in one basket is in point here. The depredation of the boll weevil in the cotton fields of the South has suggested to the people of many communities that it is better in the long run to rely upon several crops rather than upon only one.

Mining communities and cities devoted almost exclusively to one type of manufacture sometimes suffer considerably because of their dependence upon one industry. In the case of nations, the point is often made that the possibility of war warrants encouragement being given to certain lines of industry in order that the nation may be more nearly self-sufficient if cut off from foreign trade relations.

II. MIDDLEMEN

The Middleman. — An almost universal prejudice exists against that group of persons in our economic society that are known as "middlemen." Since the middleman does not raise wheat nor grind it into flour, nor bake bread, he seems to be a parasite — a useless functionary — with whom the workers must share their bread. An analysis, however, shows two things; first, that the function which the middleman performs is absolutely essential in our economic life, and, secondly, that presumably he is not overpaid.

The validity of the first of these two points has been indicated in the emphasis that has been placed upon trade relations as a necessary part of specialization, for a middleman is a trader. If a group of persons did not devote themselves to the task of exchanging the products of others, then these other persons would have to add the exchange of products to their duties and consequently reduce the time that they could devote to their specialties. Indeed, it is because of the economy of specialization that the middleman exists. One who because of his talents or his environment is efficient at catching fish, mining coal, raising wheat, or manufacturing cotton goods, tends to devote himself to that task and to leave the problem of trading in the product to someone who is an efficient trader. And likewise, such a person leaves to the traders the task of finding and procuring for him the equipment and raw materials that he requires in his work. To put the matter differently, a middleman specializes at coördinating the work of other specialists.

Certain firms undertake to perform the function of the middleman in disposing of their goods. In such a case, the firm to that extent abandons the principle of specialization. If, however, the organization in question is sufficiently large so that certain individuals may be detailed exclusively to the task of marketing the product, the principle of specialization is still applied, although not so fully as it would be if the resources of the firm were not divided between the two tasks. Similarly, farmers sometimes forsake their farming to some degree in order to sell their produce directly to consumers. Whether this is a wise policy depends upon the circumstances of the particular case, but in disposing of products the function of the middleman must be performed, either by the producer or by a specialized trader.

In the second place, the middleman is presumably not overpaid for his services for the simple reason that it is in the face of the competition of keen business men that he makes his profit. If the charges of a middleman are exorbitant, one or both of two things tends to happen. First, and more important, competitive middlemen appear who, to get business, reduce the charges for their services below that which has been customary; or, second, dealers begin to buy and sell directly, that is, they themselves take over the function of the middleman.

Although there is thus a strong presumption that the middleman is not overpaid, yet it is only a presumption, and one which may be successfully rebutted in particular cases. Inertia is strong even in business, and the force of competition often fails to accomplish what it tends to bring about. Indeed, as was suggested in the second chapter, it may be to the self-interest of competitors to refrain from price cutting. Further, a given spread between the buying and the selling price of a commodity or group of commodities may come to be regarded by the "trade" as "fair" and an attempt by any dealer to reduce the charge may be stoutly condemned by other dealers. If certain persons should be bold enough to attempt to cut prices, the other dealers in that group might be able to exert sufficient pressure upon bankers, or transportation agents, or original sellers of the commodity in question to prevent the dealers who will not "coöperate" from getting loans, or transportation service, or goods for resale.

While a group of middlemen might thus maintain an excessive charge for their services over perhaps a long period of time, yet the limit within which such excess prices could be charged is somewhat narrow. For a spread that is markedly excessive would tend to invite competition that would be too strong to be resisted, or it would lead business men and consumers to purchase direct from producers. It seems unlikely that middlemen generally receive rewards that are incommensurate with the services that they render.

The amount that is received by middlemen varies according to the product handled. The following tables show the portion going to middlemen and others in the case of certain commodities.

TABLE 6

Distribution of the Consumer's Dollar Spent for Typical Items of Food in 1921[1]

	Cornflakes	*Rolled Oats*	*Fresh Beef*	*Bread*
Farmer received	22.0¢	17.83¢	67.7¢	28.1¢
Transportation costs	15.0	10.17	10.6	7.0
Manufacturing costs	9.7	10.65	5.6	19.7
Selling expenses	39.4	51.66	11.9	36.6
Mfrs.' and dealers' profits	13.9	19.69	4.2	8.6
Consumer pays	100.0¢	100.0¢	100.0¢	100.0¢

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[1] Joint Commission of Agricultural Inquiry, *Marketing of Agricultural Products*, 1921, Vol. IV, pp. 210, 212, 214, 218, 221–222.

TABLE 7

DISTRIBUTION OF THE CONSUMER'S DOLLAR SPENT FOR MEN'S SUITS, AND FOR SHOES, IN 1921[1]

	Suits	*Shoes*
Raw materials	28.2¢	38.5¢
Manufacturing cost	23.3	18.3
Mfr.'s overhead and selling expense	15.1	11.8
Mfr.'s profit	1.5	3.1
Retailer's expense	30.6	26.9
Retailer's profit	1.3	1.4
Consumer pays	100¢	100¢

In five out of these six cases, over twenty-five cents of the average dollar paid by the consumer went to the payment of sellers, and in the case of rolled oats this item is shown to be over fifty cents per dollar. "The expenses of marketing distribution are commonly equal to or greater than the factory or the farm cost of an article."[2]

The effecting of economies in marketing are thus of great significance. But it must be kept in mind that in many cases the expense has become apparent because of the specialization of the function of selling. Without this specialization the actual cost of marketing would tend to be larger than it is now.

III. RELATION OF THE INTERESTS OF SPECIALISTS TO THE INTEREST OF SOCIETY

Adam Smith said that each person is guided by an unseen hand to do that which is best for himself and at the same time best for others. Thus, as a grower of corn increases the yield of his crop per acre, he helps not only himself but all persons who buy corn or other foodstuffs in the market. Reflection shows, however, that the picture is not so rosy. The individual interest and the social interest are often in conflict.

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[1] Joint Commission of Agricultural Inquiry, *Marketing of Agricultural Products*, 1921, Vol. IV, pp. 210, 212, 214, 218, 221–222.

[2] P D. Converse, *Marketing Methods and Policies*, 1922, p. 7.

Restriction of Output. — In the first place, it may not be to the interest of a producer to turn out the largest possible volume of goods. If one has a unique product, it may be profitable to restrict output or to destroy goods already produced in order to raise the price. The conditions under which such a practice would enhance the gains of the individual producer will be discussed in the chapter on monopoly price.

This also, of course, applies to the entire group of producers in any given field. During the past few years, the farmers of this country have been publicly urged to reduce the output of farm crops in order to enhance the prices of such goods. The rubber producers of British India have most effectively followed this policy recently, and, likewise, for several years the coffee producing states of Brazil have restricted output in order to secure a high price.

Further, conditions are constantly arising in which manufacturers deem it wise to curtail the output of their factories. This may be true of so many establishments that large numbers of laborers are unable to find employment. This closing of factories, or the working of them at less than full capacity, may be said to be in the social interest if full operation would lead to widespread bankruptcy and thus to general disorganization throughout the industrial society. But there can be no question that this protection of the individual firm involves a cost to society in the form of the product that might be turned out if production were not curtailed.

Such reductions in the output of goods are tied irrevocably to the specialization of economic function. On a self-sufficient farm such as was typical during the pioneer days, it was never necessary that anyone do less than he could do. It is as specialization and trade prevail that the interest of one may become opposite to that of the whole.

The Introduction of Machinery. — Another illustration of this clash of interest is often seen in the introduction of labor-saving machinery. To produce the same, or an increased volume of goods with fewer men than were formerly required is clearly in the interest of the community. Some laborers are thus released for the performance of tasks that otherwise could not be undertaken. But the introduction of such machinery tends to be to the immediate disadvantage of laborers. It means the loss of a job and perhaps the loss of an opportunity to exercise specialized skill that has been developed.

Occasionally an improvement may so cheapen the total cost of production that the resulting decrease in price will cause such an increase in the volume of sales that more persons may secure employment in that given line of work than was possible before the change took place. For example, the introduction of the sewing machine greatly increased the number of persons employed at sewing. But the usual situation is that improvements reduce employment in the occupation concerned. Proof of this is seen in the great variety of goods produced to-day, as compared with the variety of even only a few years ago. It is only as the older, and in general the more important, lines of work can be carried on with fewer laborers, that there is opportunity to take up new and less vital kinds of work. Thus the introduction of labor-saving machinery has tended to mean an immediate loss of employment to some laborers.

Long-run Tendencies. — In the long run, improvements in technique will not reduce employment. This is readily seen by looking at our society. During the past decades there has been a tremendous increase in the use of labor-saving machinery, and yet the volume of unemployment has not been increased. Broadly speaking, the volume of employment is limited only by the desires of the population for goods and services. So long as there are unsatisfied desires there will be work to do.

The process by which the loss of employment in one field leads to employment in other fields may be seen by considering the case of a manufacturer. If a manufacturer dismisses some of his laborers because of increased efficiency on the part of his labor force, or because of the installation of labor-saving machinery, larger profits will be realized and he will thus be able to make expenditures that he could not otherwise make. These will normally take the form either of increasing his purchase of consumption goods or the enlargement of his factory. In either case the demand for labor will be increased — opportunity for the employment of the laborers that were dismissed will be created. If, however, competing manufacturers adopt similar policies, the price of the product must be reduced and the manufacturer's profits will not increase as has just been assumed. But in that event the consumers will be able to buy the article in question for less than they have been accustomed to pay for it, and accordingly, they will be able to purchase articles which they have formerly been unable to purchase. This, consequently, will amount to a demand for the labor which has been released by the increased efficiencies under discussion. Or, if the increased efficiency results in an increase in the wages of employees, the demand which they can make upon their fellows will be increased. Thus there is no danger of permanent unemployment from an increase in economic efficiency.

But to stress again the conflicts of interest, it will necessarily take time for the gains that accrue to individuals to be used in an increased demand for the production of other goods. Furthermore, to supply this new demand it will be necessary for the persons that are displaced to shift their occupations, and thus they may lose whatever advantage they have had due to skill in the performance of the former tasks. Also, in order to produce in response to the new demand it may be necessary for some laborers to move to another city or region. This will tend to involve not only inconvenience but perhaps considerable expense. In time, however, readjustments will be effected as was shown above, and even the persons who lost their jobs because of the changed conditions may be better off than they were before.

The persons who protest at these changes do not, of course, have the point of view of a philosopher who is calmly surveying industrial processes over decades or centuries of time. The workers about to be thrown out of work are interested in the "living present" as even the philosopher might be if his job were in jeopardy. A group of factory workers, for example, knowing that the installation of a piece of machinery will mean their displacement, can hardly be expected to look upon this with satisfaction, even if, in the long run, it is going to mean an increased demand for labor on the part of the employer, or the consumers of the product, or of the employees who are retained; for before these influences have had time to work themselves out, these particular persons may suffer great distress.

Inefficiency. — Somewhat similarly to the opposition to machinery, workingmen often advocate a policy of working slowly or inefficiently They argue that thus more jobs are provided. Such practice is clearly contrary to the social interest, but just as clearly it is often in the interest of the men who advocate it. If house painters, for example, see only a few jobs in sight during a given season, they may have more days of employment if they use narrow brushes, or if they work slowly, than if they work efficiently. But it is, of course, only within limits that such a policy can result in gain to those who practice it. Inefficiency may easily become so marked that a given kind of work will be dispensed with entirely.

Employment of the Rich. — Very similarly, too, the employment of rich persons is often opposed on the ground that jobs are thus taken away from the poor. In the long run this is not the effect of such employment. There is not just so much work to be done. It is in the general social interest that each person should contribute to the doing of the work of the world — that there should not be any parasites, poor or rich. And to be idle is to be a parasite, regardless of how large one's money income may be. The society as a whole would be better off without the idlers. But for short periods of time, the taking of employment by those who have been idle may be of marked disadvantage to others.

A Changing Society. — It may be noted, parenthetically, that the distress to the working classes that comes from industrial progress may be less than has just been suggested. Our economic system is changing constantly — new lines of work are being developed and old lines contracted. Consequently, workers are often enticed from old to new employments, rather than discharged from the old and left to find the new. Furthermore, as new lines of work are developed and old lines disappear, the new ones may be carried on largely by the young men and women who are entering industry, while the lines that are being discontinued may persist over such a long period of time that those persons who are especially skilled therein may continue to have employment at their old tasks until they drop out of industry because of death or old age.

The Balance of Interest. — But despite the fact that economic change is in itself a cure for some of the evils that arise out of it, there is no disputing the validity of the above illustrations. They show clearly that the specialization of economic tasks and functions in a society of private property leads to a conflict of economic interests. Many persons would like to believe that all of our economic relations are harmonious. But however comforting such an idea is, it is far from the truth. One who holds that opinion does not understand this phase, at least, of the economic society and is thus unable to contribute to a solution of these problems.

The general problem of citizenship in this particular is to prevent individual interests from defeating the interest of the social whole, and at the same time so to conserve the interests of individuals that the interest of all will not be jeopardized. That is, the problem is that of balancing against each other the interests of the various groups that make up the society. At times, the sacrifice of the interests of a few to the interests of many may be desirable, and at other times the balance may need to be struck in favor of the immediate interests of a few in order to serve best the interest of all.

Money-making. — Another way of phrasing many of the points to which we have just called attention is that in our society the various specialists wish to make money. Laborers, professional men, capitalists, landowners, entrepreneurs work for money. For the most part, in order to make money, it is necessary to do something that is worth while for one's fellow men. Thus one may build houses, or grow corn, or teach school, or repair automobiles. But in many cases it is possible to make money without doing that which is useful to others. As Wesley C. Mitchel says, "With all its efficiency the money economy has a fundamental defect — it warps the aim of our economic activity. What we want as human beings is to make serviceable goods. What we are compelled to do as citizens is to make money."

As citizens of an industrial society, we should wish to assist in doing the necessary work of the society, but the specialization of economic activity makes it possible for many to prosper by not only failing to be of assistance in making the living for the group, but by deliberately thwarting the efforts of those who produce, and by preying in one way or another upon those who perform socially useful services.

PROBLEMS AND EXERCISES

113. (*a*) State briefly the point that trade is necessary for specialization if the institution of private property prevails. (*b*) Show that an economic society might be so organized that there could be specialization without trade.

114. "A nation is so much poorer by every dollar it sends out, just as an individual is so much poorer by every dollar he spends." Discuss both clauses.

115. Develop an original illustration similar to the one having to do with the lawyer and the stenographer.

116. Why doesn't the farmer sell his produce to the consumer? Why doesn't the grocer buy direct from the farmer? Why do not the manufacturer and the consumer work together to eliminate the middleman?

117. "The American producer needs a foreign market in order to sell his surplus." Comment.

118. Show how the fact of *trade* makes it impossible that lemons be grown in Ohio.

119. "Foreign trade can add to the national wealth only when it brings in a money balance." Is this true? What is the principal thing to be gained by maintaining trade relations with the outside world?

120. "The Russian Government is expending $12,000,000 a year on new aeroplanes, and although these may never be needed in war, the money will not be wholly wasted, for all the machinery is to be designed and constructed in Russia." Editorial, *The Independent*, April 13, 1914. Discuss the economic principle involved.

121. "That proportion of the money received from the bonds (sold by European governments to finance the present war), which is spent in the home country, is not all wasted, but there is no getting back the money which is spent in the United States or other lands. For this reason, Germany is in better financial condition today than any of the other belligerents. Her dealing has all been among her own people." Roger W. Babson, in *Daily News*, August 1, 1915.

(*a*) Did the allies follow a sound policy in buying goods and ammunition in the United States? Does Babson imply that they were wise or foolish?

(*b*) Did the allies need to get back the money which they spent in the United States in order not to lose?

(*c*) State in other than monetary terms the economic cost of the first year of the war.

122. What are some of the costs that a middleman has who buys produce from farmers?

123. If the middleman is not overpaid how can you account for large mail order houses such as Sears and Roebuck?

124. Show the effect upon the demand for farm products of an increase in the efficiency of coal miners; the effect of an increase in the supply of farm products upon the demand for coal in manufacturing industries.

125. If we should cease to employ domestic and personal servants, what would be the long-time effect upon the volume of employment? The short-time effect?

126. "Opposition to the introduction of labor-saving machines is not due to the possible long-time effect, but to the possible short-time effect." Is this sound? Explain.

127. "If a man does more than a fair day's work he is unfair to his fellows as he is taking work away from them." Discuss.

128. "The introduction of machinery tends to be to the immediate advantage of the employer; the immediate disadvantage of the employee; the ultimate advantage of the entire society." Is each part of this statement sound? Explain.

129. Give an original illustration of a conflict between the interest of an individual and the entire society. Give an illustration of a harmony of interest between an individual and most of his fellows. Can you give an illustration of a harmony of interest between one person and *all* of his fellows?

REFERENCES

Almost all of the books listed in the appendix contain discussions of this subject. International trade is discussed more fully in Chapters XXXIII and XXXIV.

CHAPTER XI

CONSUMPTION

Definition. — The word *consumption*, as is true of so many words in economics, is used in both a broad and a narrow sense. In the one sense, it means the utilization of goods, as in eating food or burning coal in an engine; in the other, the meaning of the term is restricted to the use of goods in the *direct* satisfaction of personal wants. The use of materials, machines, and factory buildings in the manufacture of goods is not consumption in this meaning of the term, as these things are used *indirectly* in the satisfaction of wants.

The distinction between these two meanings can also be indicated by noting that the one includes both personal consumption and the consumption of services, materials, and instruments in the production of goods, while the other excludes all uses of services or things in the processes of production, thus making *production* and *consumption* antithetical. It is this latter, or narrow meaning that economists usually intend in using this term, and it is in this sense that the word is used in this chapter.

The consumption of goods is often said to be the end of the whole economic process. This is true if the word *end* is used to mean *culmination*, but not if it is used to mean goal, because the production of goods is in part an end in itself. This is the case when, or to the extent that, persons enjoy the work that they do. Perhaps we are safe in saying that a very considerable part of the productive effort of men is an end in itself, as well as a means, to the satisfaction of desires for consumption goods. Certainly one of the marks of a good society is a condition in which economic activity contributes directly to well-being, as well as to the creation of economic goods that will promote welfare.[1]

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[1] Compare Chapter VI, section II.

Consumption and the Direction of Production. — Even if the goal of economic activity is not solely the consumption of goods, production must be directed toward consumption, if productive efforts are to have significance. Indeed, by definition, to be productive, activity must be directed toward consumption. The channels that production will take — the goods and services that will be produced — may be determined in several different ways: (1) Individuals or groups of persons may directly produce for their own consumption. Cultivating a garden for one's own use or enjoyment, and the building of a church by a congregation or community are illustrative of such direction of productive forces. (2) In certain cases of production the projects are undertaken because the persons responsible believe that the consumption thus made possible will be good for other persons. It is thus that many schools, colleges, research organizations, churches, and missionary projects come into existence through gifts. (3) Or, the political government may direct economic efforts, as in the building and maintenance of schools, roads, parks, universities, post offices, and other agencies that contribute consumption services to the general public. (4) Again, producers may undertake given lines of work with a view to selling the product to consumers. This is, clearly, the typical case with us to-day.

Most of our production is carried on for the market. Even in the cases just noted of production being directed by the government, or by philanthropists, the production that is antecedent to the final product is largely, if not exclusively, in anticipation of market demand. For example, the government may direct that a road be built, but the materials that are used in constructing it are normally purchased on the market from persons who produced them in anticipation of such an opportunity to sell. In short, market demand, as emphasized in Chapter II, is the outstanding factor in directing our productive forces.

The purchasing consumer is thus the king-pin in our economic society. Productive efforts are directed with a view to getting his money. Unless producers furnish what consumers are willing to buy, and at prices that they can and will pay, they must suffer the consequences in business failure. To forecast the desires and the means of consumers is accordingly an ever-present problem for producers. Failure in this means failure in business. Something can be done by skillful advertising and clever salesmanship to create desires, as will be noted presently, but even so the consumer decides finally as to whether the producers in question are to be rewarded for their efforts.

The forecasting of market demand is, of course, as old as is the production of goods for sale, but in the past few years there have been marked improvements in the technique of forecasting. Scores of expert statisticians and economists in the United States are now devoting themselves exclusively to forecasting both general market trends and the sales possibilities in special fields of production. But as the name indicates, such conclusions are merely *forecasts.* Unforeseen conditions may prevent the realization of the results that are predicted. Thus in spite of careful work of this kind, private enterprise is, and must remain, a continuing series of price experiments with consumers, the success of each being indicated by the profits or losses that result.[1] Obviously, the better the forecast, the less hazardous is the experiment. And since failure by a business man to sell products means that productive efforts have been used unwisely, any further improvement in the technique of forecasting is of prime social importance.

In connection with this consideration of the problem of directing productive energy, the simple point may be made that as the productive power of a nation is used to supply consumption goods to certain social groups, the extent to which other groups may be served is accordingly reduced. There is not an unlimited fund of productive power, as some persons seem to believe is the case. An augmentation of the large incomes of a few people tends to direct productive efforts into the furnishing of expensive articles of consumption to such persons and their families; while an increase in the incomes of the poorer groups tends to increase the volume of work directed to supplying articles of small expense. The saving of income, however, rather than the spending of it, may mean that an increase in buying power of a given group will not be devoted to the extension of consumption by the persons receiving it, but the tendency is clearly as indicated.

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[1] Hazel Kyrk, *A Theory of Consumption*, 1923, p. 109.

The above discussion is to the same effect as that of Chapter II, in which the point was made that the lines of production that are followed in our society are largely determined by the prices that prevail: rising prices in one field call more productive services into that field, and falling prices for some commodity lead to a partial, or complete abandonment of its production. The present discussion merely restates this analysis in terms of consumers.

Producer and Consumer. — Statements are often made which suggest that consumers constitute a class of persons distinct from producers. Thus the "consuming public" is sometimes exhorted to oppose the "producers." But there is no separate class of consumers. All persons, including producers, are consumers. Hence, appeals to consumers as a group are usually made in vain.

In the case of some goods, however, consumers can act together effectively in determining their relations to the producers. Thus the consumers of water, gas, and electricity in a city usually control the quality and the price of each of these products. And in many other cases, as will be noted presently, political control is exercised over producers because of the general public interest in the articles consumed. But it is only in individual cases — not in the totality of goods produced — that a line can be drawn between producer and consumer which is effective for purposes of control.

Government Control Over Consumption. — As just indicated, political control is exercised to some extent over consumption. Some laws seek to protect consumers against impure qualities in goods purchased, as in the case of pure food legislation, or against unfair prices, as in the case of the regulation of the rates of public utilities. Other laws prohibit persons from using certain articles, as opium, and others seek to protect consumers indirectly by prohibiting the manufacture or sale of certain goods, as intoxicating liquor, or by prohibiting the display of pictures or the circulation of books that are deemed by the official censor to be improper.

Quite naturally there are differences in opinion as to the extent to which consumers should thus be protected by law rather than left free to make decisions for themselves as to the goods to be used. There is perhaps no dispute, save by those few persons who are affected as sellers, as to the advisability of regulating the rates that may be charged by a public utility that has a monopoly in the furnishing of some service or commodity. The differences in opinion that are significant are those which have to do with the general question of freedom of consumers. The persons who differ on this point may be classified into the two groups, socialists and individualists, as stated in Chapter II, but in many cases the socialists in this classification will be found to be individualists when the question of freedom of producers is under consideration, and, likewise, the individualists, when consumers are concerned, may be in the other group in regard to the advisability of exercising political control over the conduct of business men.

In considering consumers' freedom, as in the other questions of regulation, the line cannot be drawn sharply between the individualists and the socialists, because there is perhaps no one who does not wish to have some control exercised, nor anyone who does not wish to leave to consumers some degree of freedom. The differences in opinion are in regard to how extensive the control shall be.

Some persons would have a large degree of regulation. They would prohibit the "ugly," the "impure," the "shoddy." It is not difficult, say such persons, to determine the basic needs of society and to prohibit the production and use of the things that do not contribute to the satisfaction of these needs. Against this position, it is argued that except in the case of food there is but little agreement as to what is good. The beautiful, for example, is merely that which is accepted as beautiful. Taste in respect to beauty varies greatly from time to time in our society, and differs markedly as between social groups that have never been in contact with each other.

Similarly, opinions as to what is wholesome in pictures, art, and literature vary from time to time and from place to place. No one can pronounce a final word on such matters. Likewise, attitudes as to political, religious, economic, and social institutions are very dissimilar, and the prevailing opinions in a progressive society such as ours are almost always in the process of change. Consequently, books and magazines advocating new arrangements are constantly appearing. Who is to say what are the best possible arrangements in respect to our total social life? If the prevailing notions among us in respect to the goodness of our institutions are correct, then the persons of all the ages past who have approved the then existing institutions have been in error, for ours are not old in their entirety. If it be answered that the former institutions were good for the day and generation in which they flourished, such a reply will be an admission that conditions change, and thus that changes are perhaps taking place among us that may make advisable certain changes in some of our institutions. Freedom rather than control in the choice of books, magazines, plays, pictures, and art thus seems to be compatible with the largest social good. Through trial and error those things and those ideas that will contribute most to human well-being for any one period of time will probably be selected.

Further, the findings of scientists in regard to a large range of things such as the types of clothing that will best promote health, or the methods of constructing and heating houses, manufacturing automobiles, or making ink so as to get the best results are perhaps still far from complete. Thus here, too, freedom to choose and experiment is conducive to welfare. Certainly, there would seem to be no question that the burden of proof is upon him who would substitute regulation for freedom in the field of consumption, just as it is in all cases of regulation.

Control Over Consumption During a War. — During a war such as the recent World War, all experience points very definitely toward the advisability of strict regulation. In such a time there is practically no difference of opinion as to the use that should be made of a country's resources. The question is how may all of the productive capacity of the nation be used most effectively in the prosecution of the war. The free play of market forces are inadequate to effect the end in view. The government by bidding high for the services and materials that are most urgently needed can induce large productive efforts in the given fields, but such high prices put buying power into the hands of the persons who thus assist in supplying such services and materials, and many of them tend to spend the money thus received for luxurious articles of consumption. This necessarily diverts labor and materials to the supplying of luxurious wants. Indeed, it is only as this is done that there is justification in a policy of paying high prices in order to call out productive effort. If high wages may not be used to buy an increased amount of goods, they will not influence laborers to produce the things desired, except as the laborers belong to the small group that is more interested in saving for the future than in spending in the present. Thus free pricing inevitably fails to secure the desired results in a serious war.

The extent of regulation during the latter part of the recent war was most marked. In Great Britain, the consumer was limited as to "the amount and quality that he might have of bread, cake, meat, milk, butter, cheese, other fats, sugar, tea, jam, gas, electricity, petrol, and coal. He found on the market very limited quantities, or none at all, of such commodities as wool, linen, leather, beer, fruits, paper, watches, perambulators, and typewriters. He was not permitted to feed his domestic animals as he pleased, to use a horse or motor car for pleasure, to build or repair a house, to 'commute' at will, or go abroad. . . . This limitation upon the consumer's freedom of choice came through substitution of control by authority for control by 'price.'"[1]

If the war had continued another year, the control in the United States would also have been very extensive. Such war-

[1] Hazel Kyrk, *ibid.*, p. 33.

time control is also advocated by some persons on the ground that by restricting production to certain lines, and by controlling prices in such lines, it will become less possible, if not impossible, for any of the different economic groups to make large profits during a war.[1]

Consumers' Knowledge. — If we assume as suggested above that the choice of consumers should not be limited by law during times of peace, we may still hold that there is perhaps an extensive field of public service in the determination of the quality of goods offered for sale, that might be undertaken by a government agency. The Bureau of Standards at Washington, D. C., for example, passes upon the fitness of the goods that are purchased by the national government. This service costs $2,000,000 per year, and is estimated to save the government $100,000,000 on its yearly purchases, which amount to $300,000,000.[2] The wearing qualities of roofing material, carbon sheets, paving material, hoisting machinery, and a thousand and one other articles are determined through tests that are scientifically controlled.

The trial and error method on the part of consumers is a very slow and expensive process of determining such facts, and, indeed, may never lead to complete agreement among those who are conducting experiments. Despite the universal interest in the automobile, for example, the general public is without definite knowledge as to the relative efficiency of the various makes of cars in respect to the engine pull, the fuel consumption, the braking power, and the general endurance of the machine. A group of scientists such as are connected with the Bureau of Standards could determine accurately the qualities of each kind of machine in respect to any one of these or other points. It has been estimated that if the Bureau of Standards would make available to the public the results of its findings the American people could save at least a billion dollars per year.[2] Certain persons would lose, of course, if this were done. They are the producers who are now disposing of inferior and spurious products. It has also been suggested that groups of consumers might join together to have goods tested. While this would undoubtedly far more than repay the cost of making such tests, it is very unlikely that such coöperation among consumers can be brought about. The utilization of a government agency seems to be the way to secure such information for the guidance of the buying public.

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[1] Bernard Baruch, "Taking the Profit Out of War," *The Atlantic Monthly*, January, 1926, Vol. 137, p. 23.

[2] S. Chase and F. J. Schlink, *Your Money's Worth: A Study in the Waste of the Consumer's Dollar*, 1927, pp. 4, 5.

The Standards of Living. — The term *standard of living* is used most often to mean the level of consumption which a person or group feels is essential to a respectable existence. The standard of living may differ somewhat from the scale of living that prevails, but it is not defined to differ markedly from the actual living conditions. To include yearning for the unattainable would mean that the idea of standard was forsaken. As an indicator of the scale on which one lives or of a close approximation to that scale, the term *standard of living* is significant.

The standard of living is then a plan of life based on the resources and conditions at the command of the members of a social group. The size and type of houses, their location and furnishings, the method of caring for and educating children, the kind of church that is built and the type of minister that is hired, the forms of entertainment and recreation that are indulged in, and the method used in caring for the dead are some of the various items that go to make up the standard of living of most groups. The standard of living thus includes many diverse elements, all of which contribute to the pattern of life.

Standards of living differ among the different classes in a modern society and are very different to-day from the standards that have previously prevailed. Adam Smith observed, for example, in his *Wealth of Nations*, that leather shoes were regarded as necessary for both men and women in England, for men but not for women in Scotland, and for neither sex in France where both men and women of the lower classes went habitually without them. Shoes are certainly a part of the American standard of living to-day, and, likewise, many additional things that were undreamed of in the time of Smith.

The possibility of having certain goods is obviously of great significance in this connection. As new commodities are made possible some of the persons who are able to do so begin using them. Other folks then, especially in a democratic society such as ours, strive to imitate those who have thus raised their scale of living. If the community is prosperous, it may be but a relatively short period of time until the new commodities, or the new way of living, that began as a luxury for a few becomes a necessity for all. The use of clothing, houses, stoves, knives, forks, and carpets, to mention a few of the countless items the possession and use of which is now part of the social mores, began and grew in this way. Similarly, a college education is year by year becoming a social necessity for an increasing portion of the population.

Such extension of the scale of living is fostered and encouraged by advertising and salesmanship on the part of persons who have undertaken the production of the articles of luxury. Those who do not use the new, whether in clothes, automobiles, summer camps or lines of table talk are most skillfully portrayed as outside the social pale. To "belong" one must take on the new.

Are Human Wants Insatiable? — In the light of the experience which we and our ancestors have had in extending the standard of living, the conclusion has been drawn that human wants are insatiable. There does seem to be no limitation with many people to the expansion of their scale of living, if the financial means are at hand: but the general proposition that wants are insatiable may easily be pushed too far. All persons do not desire to extend their consumption of goods, or at least, not as rapidly as it is possible for them to do so.

Spending habits tend to be somewhat fixed, as do the other habits of life. In addition to this factor, the influence exerted by the members of an individual's social group is very important in this connection. To adopt a scale of living above that of a given social group tends to put one outside such a group. Until a position can be secured in a new social group, even the most ambitious persons tend to maintain membership in their accustomed group, after they have acquired financial means to raise their scale of living. Thus habits of spending and the standards of friends may lead to the maintenance of a given scale of living, or to only a slight alteration, even when ample means are at hand to effect a marked change. Hence, human wants are not insatiable over short periods of time. That is, one's desire relative to the scale of living may be satisfied before the means available to extend the scale of living are exhausted.

Further, it is proverbial that many rich men do not have a high standard of living. Indeed, the accumulation of a fortune almost necessarily means a lack of desire to consume goods, and accumulate property. Some of the savings that grow into fortunes may be made by giving up the consumption of goods at one time in order that more goods may be available for consumption later, but after a fortune of considerable size has been accumulated, and after middle life has been passed, the further accumulation of riches must almost necessarily be prompted by some reason other than a desire to extend the level of consumption.

The conduct of rich men who continue to work after reaching a point where there is no desire for further consumption is easily explained. Their work is like a game; they wish to make money, to defeat their rivals, or to outwit their employees. Indeed the fact that an enlarged consumption of goods might, and in some cases certainly would, reduce the ability to work is itself a compelling reason with such men for refraining from an extension of the scale of living. Scientists, men of letters, artists, and many professional men are also not primarily interested, if interested at all, in an extension in their scale of living, if they already possess the ordinary comforts of life.

The men who make up our army of hoboes and tramps are also not desirous of increasing their scale of consumption or, at least, they are not willing to work in order that they may have more goods to use. Likewise many of those who live in the slums of our cities do not care to live above the poverty line, or through discouragements have concluded that it is impossible to rise above it. Such persons are the despair of social workers. To stimulate in them a desire to live "decently" is the aim of the persons who are interested in their welfare.

The lack of desire to have more goods to use tends to cause some labor groups to work less, as wages per hour or per day are increased. It is only as an effective use can be found for increased income that efforts are continued as income is increased. Among many of the low-wage labor groups in America, a slackening of effort tends to follow an increase in wages, but normally the desire for more goods by the laborer or the members of his family soon asserts itself and labor becomes as continuous as formerly.

It is apparent that if labor groups are not anxious to increase their standard of living, it may be possible for the employers who introduce efficient methods to retain all of the gain that comes from such improvements. Being content with the given scale of living, the employees do not make demands for an adjustment of wages. On the other hand, if employees are anxious to live better, they tend to watch closely for opportunities to demand higher wages from the employers.

It is interesting to observe that the most insistent demands for an increase in wages generally come from the laborers whose standard of living is already well above that of the lowest wage groups. It is in this group that trade unionism flourishes. The standard of living that prevails in such groups indicates a desire to live well and to imitate the standards of the well-to-do. It is thus from the "aristocracy of labor" that the demands for higher wages come. And, as anyone should expect, such labor groups are never satisfied.

Restrictions on Increase in Standard of Living. — The desire on the part of persons in the lower economic groups to increase the scale of their living is not compatible with the narrow class interest of the upper groups. As the one group lives better, the social prestige of the other group declines. Thus there is a tendency for some persons in the upper groups to insist that their standards of living shall not be imitated. One method of accomplishing this is to ridicule the pretenders, to teach them to "know their place" and not wish to be "ladies and gentlemen." Such an attitude is especially prevalent in countries where there is a powerful aristocracy. But even in democratic America there is some opposition when the lower classes attempt to take on the spending habit of the more well-to-do. Some of this criticism is undoubtedly prompted by a desire to have such persons use their money wisely, but it seems reasonable to believe that it comes in part from a feeling of superiority on the part of the more prosperous classes.

Employers are often especially anxious to keep their laborers from wanting an increased standard of living. If wages and the standard of living are so related to each other that the prevailing standard is being maintained, the tendency will be for the employer to be free from demands for increased wages so long as the laborers do not wish to change their scale of living. American employers of immigrant labor have been repeatedly accused of deliberately encouraging the retention of foreign standards by their workers. They have often housed them at some distance from American groups and maintained a similar policy of segregation in the workshops.[1]

There is another angle to this. Such a policy is to the disadvantage of those employers who are manufacturing goods for sale to the low-wage groups. But while employers as a class might lose by following a low-wage policy, one employer will clearly profit if he can have a low wage bill in relation to his output. If wages have already risen sharply, as during the World War, employers may then be anxious to stimulate a desire for an increased standard of living on the part of their workmen, in order that they will work continuously.

It may also be observed in this connection that certain employers are said to encourage thrift on the part of their employees in order to combat tendencies for them to increase their standard of living, as such increases tend to lead to a demand for higher wages, and to opposition to wage reductions. Further, it may be noted that an important part of the philosophy of mercantilism was that low wages were to the benefit of the nation. Indeed, the more prominent social groups even to-day are given to frequent assertions to the effect that high wages, or "dear" labor, is disadvantageous to national welfare. The correct view, undoubtedly, is that high wages, a high level of consumption by the groups that have least, is an indication of a high degree of national well-being.

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[1] T. S. McMahon, *Social and Economic Standards of Living*, 1925, p. 147.

Resistance to a Falling Standard of Living. — It is characteristic of all persons that a standard of living that is once realized is held to most tenaciously. Rather than suffer a cut in wages most groups will endure prolonged periods of unemployment. Furthermore, most social groups lend their support to any one group that is attempting to maintain its customary standard of living. Thus many employers often voluntarily make adjustments in wage rates to correspond to changes in the cost of living. This is, of course, only an illustration of the commonly observed social phenomena that that which is customary is regarded as being inviolable.

Scale of Living and Free Income. — One of the interesting features of our modern social organization is the provision which is made for free income. Schools, roads, parks, and libraries are furnished in most communities without charge to those who use them. Obviously, so far as this is done, consumption is not limited by the money income of the individual recipients. The amount of this free income has been considerably extended in the past century and may be expected to be further increased in the future.

PROBLEMS AND EXERCISES

130. To what extent does consumption control production, and to what extent does production control consumption? Analyze briefly and carefully.

131. "Every dollar spent is a dollar vote for the good for which it is expended." Can this dollar voting power be predicted? Explain.

132. Is there any relation between failure to predict the desires of consumers' and industrial waste? Explain.

133. Why are consumers so much less organized than producers? Will this situation always prevail?

134. What would be the effect upon consumption in the United States if three million workmen were set to building palaces and scenic bridges? Discuss.

135. "Consumption would be more regulated under a socialist régime than under the present one." Would the ultimate difference be great? Why? Discuss the relative merit of governmentally controlled consumption and the practice that prevails to-day?

136. Discuss the validity of governmentally controlled consumption during war. Tie up this discussion with a discussion of the general effect of war upon the productive powers of a country.

137. Suggest some means whereby the consumer could secure accurate information concerning goods he proposes to buy. Illustrate your point by application to the purchase of a suit or dress.

138. If you had an income of $2000 per year how would you apportion it?

139. Is a high standard of living self-increasing and self-perpetuating?

140. What would happen to the American birth rate if the poor should adopt so far as possible the spending habits of the rich? Explain.

141. What is the relation between the standard of living and the American attitude on immigration? Account for this relation.

142. What will ultimately be the effect of increased education upon the American standard of living and distribution of wealth? Why?

143. The textile mills of New England are gradually shifting to a number of the southern states. What will be the long-time and the short-time effect of this shift upon the standard of living of the working population of New England and of these southern states?

REFERENCES

Veblen in *The Theory of the Leisure Class* traces the development of pecuniary value and its relation to consumption. The books referred to in the footnotes to this chapter may be consulted for further information on this topic. See also Chapter V above.

PART III

THE ADMINISTRATION OF BUSINESS ENTERPRISE

CHAPTER XII

THE ORGANIZATION AND FINANCE OF ENTERPRISE

Forms of the Business Unit. — There are three principal plans under which a business enterprise may be conducted, namely: the *individual proprietorship*, the *general partnership*, and the *corporation*. Other forms of organization are the limited partnership, joint adventure, joint stock company, and the Massachusetts or business trust.[1] The limits upon the size of this book make it necessary to confine this discussion almost exclusively to the corporation, which is the leading form of organization. And, as in the other divisions of the book, even in limiting the discussion to corporations, it is possible to present only the most general features of the subject under consideration.

The individual proprietorship is the simplest form of organization and historically precedes the others. In this form of business unit, the individual undertakes the business venture alone, investing his money in it, and usually conducting the entire enterprise himself. He may, of course, borrow part of the money which he uses but he is the owner and manager of the enterprise. Thus he bears the risk of the business and enjoys the profits if there are any. The farming industry is carried on almost exclusively under this form of organization.

Partnership. — The second of the three principal forms of organization to assume importance was the partnership. The appreciation of the advantages that would accrue from combining their money and their talents led individuals to undertake enterprises jointly. Such an organization was called a partnership. It was in no way dependent upon special statutes, but was governed by the rules of common law. Similarly, to-day, partnerships may be entered into under the general rules and laws of business that apply to individuals. Such an organization is called a general partnership to distinguish it from the partnerships that may be organized under special laws.

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[1] C. W. Gerstenberg, *Financial Organization and Management*, 1924, p. 45.

The general partnership is highly personal. One partner cannot sell his share in the firm to another person without the consent of the other partner or partners; nor can the life of the partnership survive the death, insanity, bankruptcy, or voluntary withdrawal of any one of the partners.

A further element in the personal character of a general partnership is that the persons who make up the general partnership are usually responsible for its debts and obligations, as if they were carrying on business as individuals. This responsibility of partners is both "joint" and "several." That is, they are liable jointly, for the debts and obligations of the partnership, and also each partner is separately liable for all of its debts and obligations. Thus if one partner is well-to-do and the others are poor, the one who is able to do so may be made to pay all of the debts and fulfill all of the obligations of the partnership, regardless of how small a part he may have had in the business. Partners may, however, agree among themselves that the responsibility of one or more of the partners may be sharply limited. A rich partner, for example, may contract with the others to pay all debts. But, generally speaking, the conditions governing partnerships are as indicated in the preceding paragraphs.

About one hundred years ago, the New York legislature passed a limited partnership law, which has since been copied in England, Canada, and in most of the American states.[1] The essential feature of this form of organization is that the legal obligation (liability) of the partners, or of some of them, to pay the debts of the partnership is definitely limited. Since such an organization is a creature of the law, the legal provisions must be followed very carefully in order to secure the limitation. Any failure to comply with the legal requirements in perfecting the organization will lead the courts to treat it as a general rather than as a limited partnership, thus making all the partners personally liable for the debts of the firm. The danger to partners on this account results in limited partnerships being formed very rarely.

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[1] C. W. Gerstenberg, *ibid.*, p. 49.

Partnerships are still a very common form of business enterprise, especially in the case of small scale undertakings. Of the manufacturing establishments in the United States in 1919, that produced goods valued at $500 or more, 20.9 per cent were owned neither by individuals nor by corporations. Presumably most of these were owned by partnerships. This group produced only 6.6 per cent of the total volume of manufactured goods measured by their value, and employed but 6.6 per cent of the wage earners working in manufacturing plants. This is not surprising, since, as will appear in the following section, the corporate form of organization is for several reasons better adapted to large scale enterprises than is the partnership.

The Corporation. — Just as the partnership developed in response to a recognition of the profitableness of increasing the size of a business unit beyond that which was possible if the persons making up the partnership had separate enterprises, so the corporation, likewise, arose out of an appreciation of the profitableness of large scale operation. Indeed, it may be considered as a logical development out of the partnership, as larger and larger units of business enterprise became profitable. The subsequent development in corporation policy may likewise be interpreted in terms of the increasing size of business enterprise.

The growth in the scale of business operations necessarily meant, and must continue to mean, the use of the money funds of some persons by other persons. This is true because, first, in most cases the available funds would otherwise not be sufficient to permit a large undertaking, and secondly, in so far as large scale enterprise prevails, the opportunities for small scale operation are taken away, and thus persons who have funds to invest must entrust them to those who conduct large scale business. The corporate organization has facilitated this use of the money of many persons by a few persons.

The corporation is an *artificial* person created by law. It is owned and managed, of course, by *natural* persons, but the life of the corporation is not dependent upon the lives or fortunes of the persons who are associated with it. It is a separate creature. Therefore, contracts with it are not contracts with the persons who own the corporation, or conduct its business. Thus, save in certain cases which will be discussed presently, one who is an owner in a corporation is not personally liable for any of its unpaid debts, as would be true in a general partnership.

The other forms of business organization mentioned above, except the individual proprietorship and the general partnership, are also creatures of the state, and largely give the two chief advantages which have just been noted as pertaining to the corporation. But the laws of the various states are such that but seldom do business men find it advisable to resort to other than the corporate form of organization when the general partnership form of organization is not desired.

The Extent of Corporate Organization. — The popularity of the corporation as a plan of organization for the conduct of large scale enterprise is clearly shown by the accompanying chart, number II, which pertains to the field of manufacture and includes the establishments that produced during the given years goods valued at $500 or more. It will be noted that in 1919, 31.5 per cent of the manufacturing establishments were owned by corporations, and that these firms employed over 86 per cent of the wage earners in manufacturing, and produced over 87 per cent of the manufactured products, as measured in dollars. In mining, the corporate form of organization is even more important than it is in manufacturing. In 1920, corporations owned 51 per cent of the mines, employed 94 per cent of the miners, and produced 94 per cent of the mining product of the country. Data as to the character of ownership in public utilities, including railroads and telephone and telegraph lines, and in the fields of merchandising are not available. The public utilities are perhaps almost without exception under the control of corporations, when not owned by the government; and in merchandising the situation is perhaps very similar to that found in manufacturing. The corporation is the dominant form of business organization.

Stockholders. — The owners of a corporation are called stockholders. The total stock is divided into a number of shares, or portions, and certificates — stock certificates — are issued to the different stockholders indicating the number of shares that are owned by each person. The records of the corporation show who are the stockholders and what is the number of shares of stock owned by each one. The owners are free to sell part or all of their stock at any time, but in the case of transfer it is expected that the record will be altered to indicate the new owners. The distribution of the earnings of the corporation to individual stockholders is called the payment of dividends on the stock, or on the capital stock, of the corporation.

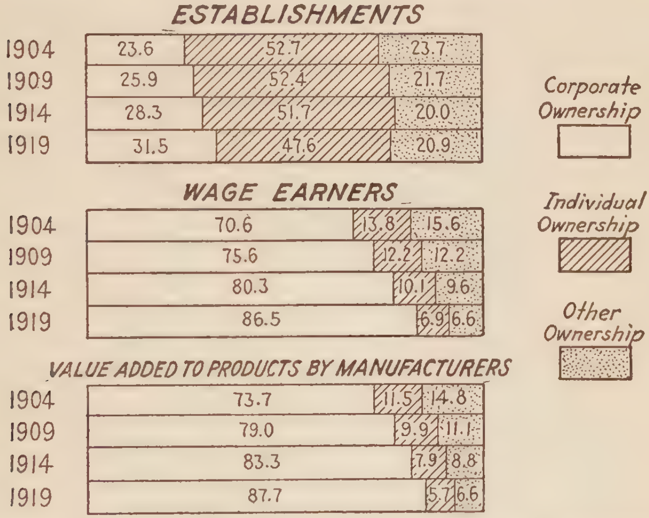

Chart II. Percentage Distribution of Establishments, Wage Earners, and Value of Products in Manufacturing Establishments, by Character of Ownership of Establishments, 1904–1919.[1]

The stock of a corporation may be all of one class or kind, or it may be made up of two or more classes, each of which gives to the owners thereof different degrees of power in the management of the corporation, or different claims on the profits that accrue to it, or on its assets in case of dissolution. This will be discussed more fully presently.

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[1] *The United States Census of Manufactures, op. cit.*, pp. 110, 111. More recent data not available.

Creditors. — The creditors of a corporation may be divided into many groups. One important group is the bondholders. These are persons who have loaned money to the corporation and have received a promise from it in the form of a bond which in the usual case specifies the amount of interest that is to be paid, the time of payment, and the date at which the principal sum falls due. As in the case of stock, there may be many different kinds of bonds. Indeed, certain kinds of bonds are hardly to be distinguished from certain kinds of stock. But in general, stock represents ownership and failure to receive dividends does not give the stockholder any legal claim against the corporation, while almost all bonds specify that a definite payment of interest and principal shall be made on certain dates, and failure to pay makes the corporation liable to suit at law. The issuance of bonds will be further discussed presently. Other creditors include persons who have through contract relations, such as the sale of goods, put the corporation in their debt.

Limited Liability. — As already indicated, the general rule is that a stockholder in a corporation is not liable for its unpaid debts in case of financial failure, except for the amount, if any, that he has promised to pay if called upon to do so, but has not yet paid. Thus if the stockholders in a corporation, or part of them, have not paid in full for the stock that has been issued to them, then in case of need for more funds they are liable for an amount equal to the unpaid balance. But if an owner's stock is fully paid for, as is the usual case, he does not have any further liability at all; his liability for future payments is not limited, for since it is non-existent there is nothing to limit. What one has paid into the corporation as a stockholder is, of course, its property and must if needed be used in the payment of its obligations, but beyond this there is no legal responsibility unless one has promised to make payments that have not yet been made.

This limitation, or removal of liability, not only gives the social advantage that comes from facilitating the investment of funds on the part of the general public, but also the advantage of enlisting the interest of men with marked business ability in the affairs of many different concerns.

Double Liability. — In the case of banks organized under the laws of the United States Government or under the laws of at least most of the states, individual stockholders are liable in the case of the failure of a bank for a sum equal to the amount already contributed or promised. A similar rule applies in most political jurisdictions in regard to insurance companies. The state of Minnesota has this rule for all corporations organized under its laws except those organized to conduct a manufacturing or a mining business. This is known as *double liability*. California has the unique system of what may be called *proportional liability*. Each stockholder in a corporation organized in that state is liable for that part of its unpaid debts that equals the fractional part of the total stock of the corporation which he owns. In both of these cases the liability of stockholders is, obviously, limited, although it is not so narrowly limited as in the usual case.

The Control of a Corporation. — The affairs of a corporation are conducted by its officers, who are chosen by a group of persons called directors. The directors are chosen by the stockholders, or by the class or classes of stockholders having voting power. Under the common law each stockholder had one vote, but the statutes of most of our states provide that each holder of voting stock shall have as many votes as he has shares of stock. It is sometimes provided by state law that voting may be cumulative. Under this plan, if five directors are to be elected, a person having 100 shares of stock would be entitled to 500 votes which he might distribute as he wished. In this way one or more persons having a small minority of stock might be able to elect one of the directors, while under the usual plan the group controlling 51 per cent of the voting stock can elect all of the directors. But of course even under the cumulative plan, the majority of voting stock can elect a majority of the board of directors and thus control the corporation. The charter or by-laws of the corporation may make any provision that is desired concerning the exercise of control, so long as it does not conflict with the statutes.

The directors may leave the management of the enterprise very largely in the hands of the president or manager, or they may exercise a very close supervision over him. But in any case, the manager is responsible to the directors; they are the power behind the throne. The manager himself may own a large portion of the stock and thus, independently of his position as manager, be influential in directing the affairs of the corporation. Indeed, the manager may himself be one of the board of directors, and is often the chairman of the board. If the voting stock is closely held by two or three men, some of the directors are usually "dummy" directors, who own but a small amount of stock and are elected merely to provide the number required by law. They, of course, vote as requested by the stockholders who elect them.

Minority Control. — It is not, however, necessary for a group of men to own as much as a majority of the voting stock in order to exercise complete control over the affairs of a corporation. If the voting stock is owned by only a few persons, 51 per cent of it may be necessary for control, but if it is owned by a large number of persons, there is normally no likelihood of even an attempt being made on the part of most of the stockholders to exercise control. In the first place, if the business of the corporation is going well — if dividends are being paid — the stockholders who are primarily investors rather than managers will have no desire to interfere with the management. But even if the affairs of the concern are going badly there may be no possibility of getting united action from the various stockholders. If, for example, they are widely scattered territorially and are for the most part small investors with holdings that are relatively of small importance to them, the difficulty of securing their coöperation in electing a board of directors who will alter the management of the concern is practically unsurmountable.

The case of the Pennsylvania Railroad is interesting in this connection even though it affords a somewhat extreme illustration of the distribution of corporate ownership. On January 1, 1927, there were 141,200 stockholders in the company. The average number of shares held per stockholder was seventy-one, while about 40 per cent of the stockholders were women. These stockholders were widely scattered geographically. Collective action by them, or by a large portion of them, is not possible, even if their business experience were such that they were disposed to exercise control. Almost all of such stockholders are entirely without any effective power in the control of a corporation.

Indeed, so little attention is given to the exercise of voting power on the part of the holders of small blocks of stock that almost invariably when a notice of a stockholders' meeting is sent out, a statement which the stockholder is invited to sign and return is enclosed which gives to the present management the right to vote in his stead. The proxies that are thus collected from indifferent stockholders usually enable the managing group to perpetuate its control over the corporation, if its right to do so should be questioned, which seldom happens.

A great many employers attempt very sedulously to induce their employees to buy stock in their organizations. It is estimated that over 500,000 employees purchased stock in their employing corporations between 1918 and 1925.[1] These employees, it may be noted parenthetically, are very largely members of the administrative staffs of the various concerns rather than wage earners.[2] It is perhaps, on the whole, advisable for all concerned for employees to be part owners in the enterprises for which they work, but it must not be assumed that such partial ownership gives them the slightest vestige of control, in the usual case. Indeed, as a result of thus distributing the stock of any given company more widely the control of those who are already in power is normally enhanced. The authority already referred to estimated that the total number of stockholders in the United States has increased by at least 3,500,000 between the dates specified. One million of these are estimated to be customers, 500,000 employees, as already noted, and 2,000,000 investors drawn from the general public. These additional data also point toward a further concentration of actual control, because they indicate a wider distribution of the shares of the companies concerned.

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[1] R. S. Binkerd, "The Increase in Popular Ownership since the War," *Proceedings of the Academy of Political Science*, New York, April, 1925, p. 32.

[2] W. C. Fisher, "Distribution of Employee Stock Ownership," *American Economic Review*, Vol. XVII, No. 2, June, 1927, pp. 272–273.

Different Forms of Securities. — It was emphasized above that the most significant feature of the corporation is the use by some persons of the money of other persons. It was also stated that this follows inevitably from the conduct of business on a large scale. The minority control that has just been discussed represents an extension of this idea. Minority control has been further and further extended by the issuance of different forms of corporate securities. Since the early days of the corporation, some of the money used in the conduct of an enterprise has been borrowed by the sale of bonds, the holders of which have not had control over the business so long as the bond contract has not been broken by the corporation. Not only is money secured in this way, without parting with any share of control, but, also, if large profits are realized they belong to those in control and not to those who have loaned money through the purchase of bonds. In some cases almost all of the necessary money is secured by bond sales. To sell bonds it is necessary, of course, to make them attractive to investors. This is usually done by making them mortgage bonds. This means that if the interest that is specified is not paid, or if the principal is not paid when due, the bondholders may bring foreclosure proceedings against the corporation and thus take over the property that has been pledged. Hence such bonds are issued at the peril of those in control of the corporation.

To obviate this feature of the mortgage bond, and at the same time secure the money of other people without relinquishing control over the corporation, or giving up any claim to the profits that might accrue, corporation officials hit upon the device of non-voting, limited-income stock. Such stock resembles ordinary mortgage bonds in that only a limited amount is to be paid upon it, say, 7 per cent per year, and that it is without control. But as already indicated, it possesses marked advantages over mortgage bonds to those in control of the corporation, for the promised dividends need be paid only if the earnings are sufficient to warrant their payment. Failure to pay does not give a stockholder a claim against the corporation.

In order to sell such non-voting, limited-income stock it is normally necessary to give to the owners of it certain advantages over the owners of other stock. This is commonly done by making it *preferred* over the other stock in the payment of dividends, or in the distribution of assets in the case of the dissolution of the corporation. It may be provided that such stock shall receive, say, 7 per cent in dividends before any amount is paid on the other stock, and that in the event of the dissolution of the corporation, the holders of such stock shall be paid in full before the other stockholders receive anything. The one kind of stock thus came to be called *preferred* stock and the other *common* stock. The preference in dividend payments may be *cumulative* or *non-cumulative*. In the one case, if payment is omitted for one or more dividend periods, the corporation is obligated to make all such omitted payments before it pays any dividends on the common stock; while in the other case the obligation to pay omitted dividends does not accumulate.

Preferred stock is not necessarily non-voting stock. It may have voting power from the beginning, or it may be provided that it shall have voting power in case of the failure of the corporation to pay dividends upon it. Also, preferred stock may share in dividends with common stock after the preferred dividends are paid. Further, there may be several grades of preferred stock. In short, preferred stock may be issued on any terms decided upon by the directors of a corporation, but, of course, in order to sell the stock, terms must be provided that will be acceptable to investors. Usually, as already stated, preferred stock is non-voting and the holders receive only a limited rate of income. Indeed, the principal reason for the issuance of preferred stock is that those already in control do not wish to share the power and the chance of profits equally with other persons whose money they need for the conduct of the enterprise. If, however, restrictions are not definitely imposed upon such stock, it has all the privileges possessed by other stock in the corporation.

Non-voting Common Stock. — Within the past few years there has been a still further step in the extension of the principle of control by some persons in the corporation over the money of other persons. The common stock has been divided into different classes, only one of which has voting power. The non-voting common usually "participates" in the earning of the corporation, but it does not have the preferences that attach to the usual issues of preferred stock. The Dodge Brothers Motor Company, for example, was purchased by a banking syndicate in 1925, and a new company, Dodge Brothers, Inc., was organized. The purchase price was $146,000,000. The new corporation sold bonds, preferred stock, and 1,500,000 shares of non-voting Class A common stock for $160,000,000. Class B common stock, that carries voting power, was issued but this was not sold. It was retained by the banking syndicate. Thus none of the investors who provided the money for this undertaking have a voice in its control, unless, as is unlikely, the bankers in question purchased some of these securities. The promoters of the enterprise, without putting any money into it, have full control over the concern to which other persons have contributed $160,000,000. It hardly seems possible that the use, by some persons, of the money of others could be extended beyond this. The most significant feature of corporate organization has apparently reached its apogee.

It should perhaps be noted parenthetically that the $14,000,000 excess in securities sold over the price paid does not necessarily represent profit to the promoters. This perhaps was all absorbed in the expense of selling the $160,000,000 of securities. It is less than 10 per cent of this amount, and not excessive in view of the prevailing charges for such services.

Ownership and Management. — This separation between ownership and management which has taken place under the corporate form of organization is of great significance. As stated earlier, this is a necessary concomitant of large scale enterprise. The formation of million dollar enterprises makes it necessary to get money from many different persons, and further, if a million dollars is necessary to the conduct of a given business, the man with only a thousand dollars at his command cannot engage in it as an individual proprietor.

But however logical is this development there can be no question that it may profoundly alter the prevailing attitude toward the institution of private property. "Private property," it has been said, "turns sand into gold." It is this fact, of course, that is the basis for the justification of private ownership. But under corporate organization the ownership and use of property in many cases is far removed from that condition of ownership in which self-interest prompts an individual carefully to use and guard his private property. This is most strikingly true in the Dodge Brothers case. The owners of the $160,000,000 cannot look after their property. They have absolutely no control over it. What this development will mean eventually cannot be foretold, but it is clear that this feature of the corporation makes the important element in corporation law the safeguarding of the interests of those investors who are not in control of the enterprise. Accordingly, statutes should be adjusted to the idea that directors are trustees for stockholders other than themselves and for bondholders, rather than that they are representatives of the various persons who are interested in the affairs of the corporation.

That legislation shall take this form seems inevitable. This means, of course, the imposing of further limitations upon private property by the political government, and hence, a further step in the direction of socialism. How far we shall go in the enactment of such legislation will depend, it would seem, upon how faithfully the persons who are in control serve the interests of those whose money they use, and at the same time the general social interest.

The Transference of Stock. — An important feature of the corporation as already noted is the unrestricted transference of shares of ownership. This tends to facilitate investment since an investor knows that he can dispose of his securities at any time that he can find a purchaser who will pay a satisfactory price. This unrestricted buying and selling also tends to make it possible for the shrewdest persons to get possession of those corporations in which there is marked possibility of development, and to sell out from those that are not promising. In so far as the shrewdest buyers and sellers of corporate shares are also the most efficient managers, and not merely successful traders, this process of purchase and sale tends to place the most profitable industries of a country in the hands of the persons who can best manage them. Further, this process may facilitate the elimination of the less profitable corporations by placing them in the hands of the less competent business men. Undoubtedly, this is the result, in part, of the transfer of shares. There are thus at least two ways in which the transference of stock is socially advantageous.

But very clearly there are social disadvantages connected with this practice. In the first place, the shrewd buyers and sellers may not be the most efficient directors of industry. Their ability to buy and sell to their own advantage may be due merely to their being on the "inside." Certainly as between those who are conversant with the present conditions of a corporation and with the plans of the management, and those who are less accurately informed, there is a decided advantage in favor of the former in the buying and selling of stock. Further, of course, this gives an opportunity to those who are dishonest to take advantage of those who are not aware of the conditions, either good or bad, that confront the enterprise. Thus those whose control in the prosperous corporations is extended through the transfer of stock may not be the most capable nor the most reliable persons who engage in business.

One of the most distressing features of this practice is that the fundamental aspect of joint venture is cast aside. Each stock owner tends to watch carefully so as to safeguard his own interest. He sells his stock, or he buys more as he believes the corporation to be doing ill or well. As Taussig says concerning this practice, "no doubt it brings advantages. . . . But it is among the phases of individualism that bring a shock to a nice moral sense."[1]

Aside from the way in which the buying and selling of corporate shares may affect the relations of those who mutually enter into a joint venture, the effect upon the "outsider" must not be overlooked. There are always two parties to any trade or transfer, and while usually both the buyer and the seller gain from an exchange, yet the terms of the transaction may be such that one will gain greatly and the other suffer heavy loss. If, in the case of stock transfers, one gets out "before the crash" someone else necessarily gets in "before the crash." This is too often entirely overlooked.

Stock Exchanges. — The transference of corporate shares has led to the development of stock exchanges where securities are bought and sold. These exchanges are very important in that they facilitate investment in enterprise, since there is always a market at some price for corporate securities. But most unfortunately the stock exchanges provide an opportunity for a vast amount of stock gambling. The buying and selling on the part of most of the traders has but little, if any, reference, even indirectly, to the facilitating of original investments in enterprises. To quote again from Taussig, "the New York Stock Exchange . . . is at once the greatest institution in the world for facilitating investment and the greatest of gambling hells."[2]

Investment Companies. — The widespread growth of the large corporation as a form of business organization has led to the development of investment companies. The purchase of stocks or bonds in almost any one corporation is attended with risk. The person who has but little to invest is thus in danger of losing all that he ventures in the purchase of securities. The investment trust company has been devised in order to serve, at a profit to the organizers, the small investors and also the large ones that wish to avoid risk. A corporation that carries on this business buys the securities of a large list of companies that are engaged in many different lines of enterprise. The chance of loss to such a purchasing company is thus very slight — its eggs are in many different baskets. Such a company will undoubtedly suffer loss from some of its purchases, but if it purchases widely and carefully it can hardly lose on many of its securities. Further, as market indications change it will normally sell some of its securities and purchase others. In this way, not only are losses avoided to some extent, at least, but gains are made through the sale of securities that have risen in value.

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[1] F. W. Taussig, *Principles of Economics*, 3rd. ed., 1921, Vol. I, p. 87.

[2] Taussig, *ibid.*, Vol. I, p. 165.

This corporation — or investment trust — then sells its own stock and bonds to investors. These represent partial ownership by each investor in the large list of securities that are held. The small investor is thus able to secure the benefits that come from a wide diversification of investment, and the large investor is able to rely upon the specialist in the purchase of securities that are on the market. This development in the field of corporation finance further illustrates the sharp divergence between investment and control which has been emphasized above. Certainly, the purchaser of securities in an investment company is far removed from any possibility of exercising control over the corporations whose securities are the assets of the investment company.

PROBLEMS AND EXERCISES

144. Develop the point in regard to the danger involved to the organizers of a limited partnership.

145. List briefly the advantages and disadvantages to a society of the general partnership form of organization; of the limited partnership; of the corporate form of organization.

146. X and Y form a corporation putting in $5000 each. The business fails with assets of $6000 and debts of $13,000. How much do X and Y lose? The creditors? Is it right that the creditors should lose so much, especially if X and Y are rich and the creditors are poor? Discuss.

147. Why is such a large part of the total manufactured product produced by corporations?

148. If you had $100,000 to invest, show how you could incorporate and raise the necessary money to carry on a business requiring $900,000, and yet retain control of the enterprise.

149. Is there any connection between the development of technology and machinery since the beginning of the Industrial Revolution and the growth of the corporation?

150. Why are the holders of corporation bonds usually called creditors while the stockholders are not? Explain.

151. "If the consumers of electricity would buy stock in the company that furnishes them with electricity they would assure themselves of lower rates." Evaluate carefully.

152. "We shall have a democratic control of industry in the United States if receivers of small incomes continue to purchase corporate securities as they have during the past five years." Is this statement true? Discuss.

153. Name three forms of corporation securities and list their advantages and disadvantages to: (1) the issuers of the securities; (2) the purchasers of the securities.

154. Under what conditions should you prefer to pay $1,000 for the first, the second, and the third of the three following blocks of securities: (1) 10 shares of common stock, (2) 10 shares of 7 per cent preferred stock, par value $100, (3) 10 $100 5 per cent bonds? Explain carefully each case.

155. If you had $1000 to invest would you purchase stocks and bonds in an investment company? Discuss the pros and cons.

156. How has the corporate organization of industry made (1) savings more "liquid"? (2) "financial middlemen" more powerful? (3) the "leisure class" more permanent?

157. "The corporation tends to make it somewhat harder to justify the institution of private property." What can be said in support of this contention?

CHAPTER XIII

THE ORGANIZATION AND FINANCE OF ENTERPRISE (*Continued*)

I. THE FINANCIAL RECORDS

A Balance Sheet. — A balance sheet is a financial statement showing the values of all the things owned and the amounts of money owed by an individual, corporation or other firm, and also the differences between these two totals. The difference, or balance, between the two sums, the total amount that is owned (the assets) and the total amount that is owed (the liabilities), represents net assets or net liabilities, depending upon whether the one or the other total is the larger. Net assets are also designated as the net worth of the enterprise, or as the equity of the proprietor, or merely as proprietorship.

A balance sheet for a shoe manufacturing business owned by a Mr. Yeager may be assumed to be as follows:

Assets		*Liabilities*		*Owner's Equity*
Plant	$20,000	Mortgage against plant	$ 8,000	$22,000
Raw mat.	5,000	Bills payable	2,500	
Manuf. stock	3,000	Total	$10,500	
Bills rec'ble	2,000			
Cash	2,500			
Total	$32,500			

If Mr. Yeager should decide to incorporate the business, and make members of his family stockholders, the financial condition of the enterprise would not be altered. The assets, the debts, and the owners' equity would remain just as before incorporation. But a special name would now be assigned to the equity of the owners. It would be called *capital stock*. This would mean that capital stock would be listed as $22,000. If Mr. Yeager should decide to ascribe a par value of $100 to a share of stock there would be 220 shares.

It is almost the universal custom to include the net proprietorship or the stockholders' equity with the liabilities of the corporation in making up a balance sheet. That is, capital stock and other items of proprietorship such as surplus and undivided profits, which will be explained presently, are listed as liabilities. Under this arrangement there are, of course, two columns rather than three. Many accountants object to this method as it implies that the corporation is liable to the stockholders for the amount of their equity. This is clearly not the case. The corporation is liable to persons who have loaned it money or sold it goods on credit, or have otherwise put it in their debt, but the amount remaining after deducting such claims from the assets is net proprietorship, or net worth of the corporation for which it cannot be said to be liable to anyone. In short, capital stock is not a liability of the corporation but is merely representative of the owners' equity in the net assets.

It has been recently suggested by one of the leading accountants that the balance sheet should be arranged under the two captions, assets and equities.[1] The argument for this classification is that it indicates the true financial relationships in a very simple manner. In each item of ownership or asset there is a total equity amounting to the value of the asset. This equity may be divided among many persons. How much of it is possessed by the nominal owner and how much by other persons will appear on the balance sheet. If X owns a farm worth $22,500 and if Y holds a mortgage against it for $15,000, Y's equity is then $15,000 and X's equity is $7500. The value of the assets and the amount of the equities are necessarily equal. The two important divisions of equities are, obviously, liabilities and proprietorship. This method of arrangement is fundamentally like the second one indicated above. The one which was first given will be followed in this book rather than the plan just discussed because it is more in line with the practice of business firms.

Profits. — If the Yeager Shoe Company should prosper — if the assets should increase more rapidly than do the liabilities —

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[1] W. A. Paton, *Accounting*, 1924, p. 34.

the gain to the owners would normally be entered on the balance sheet as *undivided profits,* especially if it is contemplated that the sum is to be paid out soon in dividends to stockholders. Or, the gain that is realized might be denominated *surplus.* Whatever this amount is called, it denotes an addition to the assets of the business and is part of the stockholders' equity. These additional assets may be retained in the business or they may be converted into cash and distributed to the stockholders in dividends. If such accruing sums are retained in the business this will, obviously, tend to increase the market value of the shares.

If during the first two years following its organizations, the Yeager Shoe Company should increase its assets by something more than $15,000 over the increase in liabilities, its balance sheet might be as follows:

Assets		*Liabilities*		*Proprietorship or Owners' Equity*	
Plant	$35,000.00	Mortgage against plant	$ 8,000.00	Capital stock	$22,000.00
Raw materials	7,000.00	Bills payable	10,040.68	Surplus	15,307.25
Manf. stock	8,000.00				
Bills rec'ble	3,117.35				
Cash	2,230.58				
Total	$55,347.93	Total	$18,040.68		$37,307.25

The *surplus,* to repeat what has been said above, is not a separate or distinct asset, such as cash. The use of the term *surplus* is merely a bookkeeping device to indicate the amount of the increase in the stockholders' net worth or equity — the increase in the net assets of the corporation — without altering the amount ascribed to capital or capital stock. Or it may be said to be the item that must be added to the liabilities, plus the sum already figured as proprietorship, in order to *balance* the sum ascribed to the assets.

Dividends. — Shall this company pay cash dividends? That is, shall the stockholders withdraw money from the business or shall they leave it in the business? The answer will depend largely upon the rate of return that the controlling stockholders may expect the corporation to make as compared with the probable rate of return that they might enjoy if they withdrew cash and made investments elsewhere. The usual practice among corporations is to retain earnings during the first few years, at least, rather than distribute them to the stockholders. This not only means that the business is thus permitted to grow, but that in case of an adverse turn in affairs, the corporation will have more resources at its command than if its assets have been reduced through the payments to stockholders.

Indeed, one of the most interesting facts of modern business is the extent to which the growth of enterprises is due to non-payment of earnings to stockholders. Armour & Co., for example, began in 1868 with an investment of $16,000 and has since received $14,000,000 from stockholders, in return for additional issues of stock, but it has retained in the business, profits to the amount of $140,000,000. The Ford Motor Company has attained its present prodigious size almost solely by the retention of profits. A few thousand dollars were invested at the beginning and nothing has been added since: profits have merely been retained rather than paid out in cash dividends.

The Yeager Shoe Company might, however, decide to pay a dividend of six dollars per share (6 per cent on a par value of $100) and retain the balance of the earnings in the business. This would mean a disbursement of $1320. After this has been done, the cash, and thus the total *assets* as shown on the balance sheet above, will be reduced $1320, and *surplus*, and accordingly the net proprietorship, will also be reduced $1320.

Stock Dividends. — If the company continues to prosper and follows a fairly conservative dividend policy the assets may exceed the liabilities, by, say, $52,000 at the end of a few years. This would mean that the owners' equity (proprietorship) will have increased from $22,000 to $52,000. *Surplus* would then stand at $30,000 and *capital* as at first, at $22,000. Each of the 220 shares of stock will still, of course, represent 1/220 of the net assets, or, at this time, a "book value" of something more than $236. The directors may now decide to increase the number of shares and give the new shares to the present holders of the old shares, in proportion, of course, to their present holdings. If they decide to increase the number of shares to 440, twice the present number, each stockholder will then be given one share for each share that he already has. An increase in the number of shares of stock in this way is called a *stock dividend*. This illustration shows a stock dividend of 100 per cent. This distribution of stock will involve an alteration in the proprietorship column of the balance sheet: capital stock will be increased $22,000 and surplus will be reduced by a like amount, but no other change will be made. The assets and the liabilities will remain just as they were before the stock dividend was declared.

Are Stock Dividends Income? — In the illustration just given the implication is that the stock dividend did not constitute income. The owner of ten shares of stock held a claim to 1/22 part of the net assets of the corporation before the stock dividend was declared. After this action was taken the former holder of ten shares had twenty shares, but the total number of shares had been increased from 220 to 440. His share was just as it had been before, 1/22 of the total net assets; and the value of the net assets had not been altered. In other words, the stock dividend may be thought of merely as a bookkeeping transaction. Part of the net assets that had formerly been denominated *surplus* on the books of the corporation were hence to be known as *capital stock*. Thus the stockholders did not receive an income from the stock dividend.

This reasoning is in line with the reasoning of the Supreme Court. The sixteenth amendment to the United States Constitution, which became effective in 1913, gave Congress power to levy an income tax. In one of the early laws under this amendment, Congress declared that stock dividends were income and subject to the income tax. This provision of the law was soon disputed, and a case was carried to the courts. The United States Supreme Court held that stock dividends are not income, and hence that Congress does not have power to tax them under the sixteenth amendment.[1]

It is easy, however, to imagine a case in which a stock dividend adds to the wealth of the recipient. If, for example, a

[1] Eisner v. Macomber, 252 U. S. 189, 1920.

corporation is earning 12 per cent per year upon its net assets but over a long period of time has paid only 5 per cent per year in dividends, and if it is definitely expected that the corporation will not change its dividend policy and pay more than 5 per cent, the price of the stock will not rise to an amount indicative of the value of that portion of the net assets which is represented by a share of stock. That is, if a corporation is never to pay more than $5 per year as dividends upon a share of stock, and is never to declare a stock dividend, the market price of a share will be practically identical with the price of a 5 per cent $100 bond of that same corporation even though such a share represents an equity of, say, $250 in this corporation. In such a case, if the corporation should alter its policy and declare a stock dividend of, say, 100 per cent, and should continue the policy of paying $5 in dividends on each share of stock, the holder of stock would thus find his income therefrom increased by 100 per cent and accordingly the market value of his holdings might be expected to increase by approximately a similar percentage.

The value of one's holdings may also be increased by the receipt of a stock dividend due to the fact that it may be taken to mean that the corporation is more prosperous than the public has believed it to be; and further, as the number of transferable shares is increased, there seems to be a tendency for the total market value of the outstanding shares to increase. The holder of stock may thus find that the market value of his securities has increased as a result of a stock dividend although the portion of the net assets to which he holds claim necessarily remains just as it was before. To the extent that the value of one's holdings are increased by a stock dividend it may be regarded as income. Some economists, however, take the position that appreciation of value without a sale is not income, and thus that a stock dividend cannot be counted as income when the value of one's holdings is increased unless the stock is sold at an advance over its former price. The actual receipt of cash as contrasted with an increase in value that could be sold for cash does not seem to the present writer to be a test of income. Clearly one may make money by having one's holdings increase in value. This is the significant element in income. Thus it would seem that appreciation in the value of stock might be reckoned as income.

Accuracy of Balance Sheets. — In examining the various items and their values as they appear on a balance sheet, one may get the impression that the figures given are highly accurate. This is not necessarily the case. The amount given for cash on hand may easily be accurate to a penny. The value ascribed to plant or stock on hand will normally be highly accurate if the accountant has followed approved accounting methods in arriving at the figures, but, of course, the amounts given may be merely estimates. This is especially likely to be true of such items as patents or good will, if they are included in the balance sheet. The possibility of the values ascribed not being highly accurate is evidenced by the familiar expression that a given item is "carried" on the books at a certain figure. The discussion of overcapitalization, which follows, indicates ways in which stockholders may gain by having inaccurate balance sheets. And, of course, the figures on a balance sheet may be not merely inaccurate, they may be deliberate misrepresentations on the part of the managing officials of the enterprise.

Capitalization. — By *capitalization* is usually meant the value that is placed upon the stock of a corporation by its officers. This is presumably equal to the real net assets of the corporation. Some persons use the term to include also the outstanding long term bonds. In this use of the term, the capitalization would equal the net assets of the enterprise plus an amount equal to the bonds. Thus to say that a corporation is capitalized at one million dollars, means that the property represented by the securities one has in mind whether stock alone, or stock and bonds, is said to be worth such a sum, or was said to be worth that sum at the time the capitalization figures were ascribed.

Overcapitalization. — Overcapitalization means that a corporation claims to have more property than it really has. If in organizing a corporation, a parcel of land is put in at $30,000, and a patent at $20,000 when they are really worth only $5000 each, the concern is clearly overcapitalized. Its property is said to be worth more than it is worth. Overcapitalization, conceived in terms of the stock that is issued, is commonly spoken of as "stock watering" ; or the stock issued on the basis of the overvaluation of property or services is called "watered stock." The idea thus expressed is that the stock does not represent real value.

Overcapitalization may be entirely harmless to all concerned, or it may give to certain persons an unwarranted advantage over others. In the case of overcapitalization just noted, if in addition to the land and the patent, $50,000 should be contributed in cash by other persons, they would be credited with the ownership of one-half of the stock of the corporation, although they would have contributed five-sixths of its real assets. Certainly in such a case, the share in control and in the profits of the enterprise which the persons get who thus overvalue their contributions is entirely unwarranted.

Many persons believe that overcapitalization leads business concerns to charge more for their products than they would otherwise charge. Against this position an argument is often advanced to the effect that overcapitalization does not affect the prices of firms that are engaged in competitive industry. The argument is that such corporations must sell their products at prices that are set by forces of competition, and further that they get as much as they can whether their assets are overvalued or not. If the XY Shoe Company, so the argument runs, should inflate its capitalization — should raise the figures on its balance sheet without altering its real assets — this would not permit it to charge more for shoes than it has been able to charge, since the competition of other shoe companies would be as effective after as before such recapitalization took place.

For the most part this argument is valid, but in some cases overcapitalization of a competitive corporation may cause it to charge higher prices than it otherwise would. If it does a large business and is somewhat independent of its competitors, an increase in its capitalization may put a pressure on the managers of the concern to earn more than formerly in order that dividends may be paid on the increased capitalization. This added pressure to earn dividends may result in an increase in the price of the product, or if the price isn't raised it may be kept up if costs should fall when otherwise it might have been lowered.

This comes from the fact that although there is a tendency for companies to try to get the highest prices they can, there are many cases in which this attempt to secure the highest price possible is not made. General inertia and a fear of loss of trade to competitors are often important factors in determining the conduct of business men in this particular. Where such conditions are found, an increase in capitalization might act as a spur toward an attempt at charging prices above those that would otherwise have been charged. In this way, overcapitalization may result in the prices of a particular company being somewhat higher than they would otherwise have been. But generally speaking, the price of a product is determined by what competitors will take rather than by the capitalization figure that appears on the balance sheet of the producing company. While fictitious valuations may, as already indicated, amount to unfair representation to investors, they do not usually operate to the disadvantage of consumers.

In the case of public utilities the situation is very different. Their prices are regulated by law or by government officials and are presumably set at a point that will yield a "reasonable" return on the investment, if that is possible in view of the demand of consumers. The amount of the investment thus becomes an important item. If the utility can inflate the value of its property — if it can overcapitalize — it may be able to have the rates which it charges for its services set on the basis of the excessive valuation. But aside from public utilities and in the formation of new corporations, overcapitalization is of but little consequence.

Corporations may also be undercapitalized. That is, the property that they own may be carried on their books at less than its value. This may come about through a failure to record an increase in the value of property that has taken place; or through not including patents or good will at their full value. Such a policy is in line with conservative accounting practice.

Undercapitalization is less common now than formerly because the operation of the national excess profits tax during the war and for a few years following it, made it profitable for corporations to show the largest possible amount of invested capital in order that the rate of profits would appear to be small. And, also, the national income tax makes it advisable for corporations to show a low rate of income, and this, similarly, leads to the ascribing of the full value or more to the various assets.

Par and No-par Stock. — Shares of stock in American corporations have, until recently, always had a value ascribed to them at the time of issue. This value has commonly been $100, although other sums, even as low as ten cents, have been used. The amount of money which a share of stock is thus arbitrarily said to be worth is called the *par value.* The par value, the capitalization, and the number of shares are related to each other as divisor, dividend, and quotient.

But just as the capitalization may be declared greater or less than the real worth of the assets, so the nominal or par value of a share may be greater or less than its real value. In fact, as soon as a company has completed its first transaction, the value of each share is almost certain to be more or less than par, because every transaction normally affects the worth of the total assets. Goods, for example, that are purchased for cash may be worth either more or less than the purchase price. Clearly, if a firm makes a good bargain, the value of the assets are thereby increased. It frequently, in fact usually, happens also that the shares are not worth "par" even at the start, because they are issued at a discount, or because they are issued in exchange for property and services which are taken by the corporation at more than their normal prices. The usual reason for issuing stock at a discount is in order to pay salesmen a commission for selling it. Thus with par at $100, a corporation may net $85, paying $15 to salesmen who are often bankers. The assets per share on this basis would then be only $85 for every $100 of par stock.

The market value of a share of stock is determined by a number of factors, but regardless of what its par value is, or regardless of whether it has a par value or not, a share of stock is, as stated above, fundamentally equal in value to such a fractional part of the net assets as corresponds to the part one share bears to the total number of shares. Thus if there are 200 shares, one share represents 1/200 of the total net assets, and its value may be any possible sum. Unwary investors may, however, think of the par value of the stock as indicating its real value, and may purchase it on that basis. But if the stock is not given a par value by the corporation, it is then very plain that a share is merely representative of a portion of the total net assets.

Beginning with New York in 1912 almost all of the states have made provisions permitting the issue of no-par stock. This kind of stock offers some protection to the investing public by putting buyers more on their guard as to the real value of stock, but not much can be said in defense of no-par stock on this score. For if the law merely permits corporations to issue no-par stock, it can hardly be expected that this device will raise the moral level of business conduct. It is not reasonable to believe that many organizers of corporations will make provisions for no-par stock merely in order that prospective investors may not overrate the value of a share of stock.

The advantages in issuing no-par stock accrue to the organizers rather than to the investors. As the laws are now, such stock is always fully paid. There can be no question in case of failure as to whether the property and services exchanged for no-par stock were worth the price placed upon it, unless fraud can be shown. Thus if a man gives a patent to a corporation in exchange for 100 shares of no-par stock he cannot be charged with having paid less for the stock than it is worth. When par stock is exchanged for property or services there is always the possibility that if the corporation should fail in business, the persons receiving the stock will be sued by creditors for an amount alleged to be the difference between the valuation set on the property or services and the real value thereof. If in the case assumed above, the 100 shares had a par value of $50, the stock value would have been $5000. Then if the corporation should fail and if it could be established that the patent was worth only $1000, the creditors could secure a judgment for $4000 from the person in question. This difference between par and no-par stock means that creditors and persons who buy stock for cash are at a relative disadvantage in the case of no-par stock as compared with par stock.

There are also advantages under the usual no-par regulations to the organizers of corporations in the sale of stock subsequently to organization. It may be sold at any price, while additional par stock can be sold only at par, save in unusual cases. The regulations governing par stock thus protect minority stockholders more than do the regulations governing no-par stock. In general, the no-par stock laws give an increased advantage to the corporation officials who wish to swindle the public.

II. Corporate Legislation

Taxation of Corporate Shares. — The failure to recognize the simple fact that a share of stock is merely evidence of ownership has led most of our states to impose double taxation upon persons owning corporation stock. The common practice has been to tax the corporation on the basis of its assets and then to tax the stockholders for the shares of stock which they own. But such shares of stock are merely representative of the portions of the assets that are owned by the various stockholders, and since all of the assets have already been taxed to the corporation, these portions have already been taxed. This tax policy implies that in case a business is converted into a corporation the taxable worth involved is increased by the amount of the stock that is issued. This is in no way true. The claims of the stockholders are in such a case merely substituted for the claims of the former owners. In the illustration above, Mr. Yeager's tax-paying ability was certainly not increased by the fact of incorporation. Ordinarily, there is no more reason for taxing both the corporation and the holders of the stock than there would be to tax a farmer for his farm and for the deed to it.

The deed is merely evidence of ownership, and a share of stock is nothing more than this.

Most of the American states no longer follow this policy so far as the corporations organized under their own laws are concerned, but it is still the common practice to levy taxes upon the shares of corporations organized outside a state that are held by persons within the state. Since the corporation must pay taxes upon its property in the state in which the property is located, this clearly amounts to double taxation upon the person taxed upon his corporate security.

State Legislation. — For the most part the legislatures of the different American states have sought, in enacting corporation laws, to protect minority stockholders, creditors, and the general public against the unfair practices of organizers and managers. In this they have undoubtedly had measurable success. But all of the states are not equally fortunate in their legislation, and the states with the lowest standards tend to govern the situation, since a company may incorporate in any state regardless of where its business is conducted. Indeed, a state may offer special inducements in laws that permit great freedom in the organization and operation of corporations, and expect to get considerable state revenue from the fees paid by incorporators and from the annual franchise tax. These fees and taxes may be unusually low as a further attraction, and in many cases they constitute the only reason for incorporation in a given state. New Jersey was for several years, and Delaware is to-day the favorite place of incorporation for those who go outside their home states.

Federal Incorporation. — Many people consider this situation deplorable; some for the reason that the many differences among state laws increase the difficulty of investors in understanding the rights and limitations of corporations, and hence increase the opportunities for fraud; and some for the reason that they object to the corporation laws of the states that are favorite places for the chartering of corporations. Federal incorporation of all corporations engaged in interstate trade is advocated by the former of these two groups, as a direct remedy to the evil, and by the latter, as a possible remedy, on the assumption that the provisions specified by Congress to govern the organization and conduct of corporations would correspond to the best type of state legislation.

The principal objection to this plan is that this would greatly increase the scope and power of the national government at the expense of the states. The already extensive burden that the federal government carries makes it undesirable to increase its duties, unless very marked advantages may be secured thereby. But the way in which the states now exercise control over corporations makes it reasonable to believe that the gains from federal incorporation would be sufficient to warrant the transfer of this function to the national government.

III. Corporate Combinations

Trusts. — The point has already been emphasized that the corporate form of organization permits control by persons whose share in the ownership of the enterprise is very limited. Through an extension of this principle it becomes possible for a relatively few persons to control many different corporations.

The first important attempt in the United States to effect a combination of corporations was by means of a trust agreement in the oil industry. First in 1879 but more definitely in 1882, the majority stockholders in certain oil refineries in Ohio, Pennsylvania, and New York, agreed to assign to nine trustees a majority of the stock in these refineries. The trustees were to issue trust certificates in exchange for such stock, and were to have complete control over the corporations involved. The organization was in reality a *trust.* The men in control were trustees for the stockholders of the corporations that were in the combination. The dividends which the trustees received on the stock which they held were to be distributed equally among the holders of the trust certificates. The amount of these dividends was decided by the trustees themselves because they controlled the corporations that paid them.

The leading sugar refineries and whiskey distilleries organized similar trusts in 1887. In 1890, however, the Court of Appeals in the state of New York declared the sugar trust to be an illegal combination, and two years later the Ohio Supreme Court took a similar position relative to the oil trust. In the New York case the Court held that the directors of the corporation that was being prosecuted did not have power under the corporation laws of the state to delegate to other persons the power of managing the corporation. It was further held that the trust agreement was a partnership and that under the law corporations did not have power to form partnerships. As stated in the preceding chapter, corporations are artificial persons and can exercise only the powers that are granted them by the law. In the Ohio case the Court also held that corporations did not have power to make trust agreements, and added that in the case at issue the trust agreement was in restraint of trade, that is, that it stifled competition among the independent companies that were within the organization. This was certainly the purpose that was meant to be served by the agreement.

The Holding Company. — These court decisions made another form of organization necessary, if the desired end was to be accomplished. The *holding company* was accordingly devised. This plan of organization consists of the formation of a corporation to hold a majority of the stock of the corporations that are to act together. Stock in the individual companies is exchanged for stock in the new corporation, or securities in the new corporation are sold and the money received is used to purchase a majority of the stock in the companies that are being consolidated. The various separate companies are then known as subsidiary companies; they are subsidiary to the "parent" corporation.

Following the New York decision in 1890, the sugar companies at once formed a holding company. The oil companies temporarily followed a different plan, but in 1899 provided for a holding company, the Standard Oil Company, which form of organization existed until it was dissolved by action of the United States Supreme Court in 1911, on the ground that it had a monopoly of the oil business.

The holding company was made possible by the enactment of legislation, first, in New Jersey, in 1889 and 1893, to permit a corporation to own stock in other corporations and to exercise all of the rights of owners. The holding company is not necessarily in restraint of trade. The trust stifled competition among, say, six different companies. The holding company amalgamates the six into one, and thus there is no question of the stifling of competition among the six for they have become one. However, if the holding company should have a monopoly throughout an industry it would be in restraint of trade, and would be amenable to anti-trust (anti-monopoly) legislation. The subject of monopolization will be discussed in a later chapter.

The holding company permits a great extension of the principle of minority control, already discussed in regard to a single corporation. Assume, for example, a corporation that is organized for the purpose of controlling other corporations, and that the organizers pay in $1,000,000. The $1,000,000 can then be used to purchase a majority of the stock in corporations that have almost $2,000,000 of voting stock outstanding, assuming the stock to sell at par. The persons who control over half of the stock of the holding company and in some cases less than this amount, can thus control the corporations in question. If, in such a situation, bonds and non-voting stock represent a large part of the actual value of the various corporations, the concentration of control is greatly enhanced. One-half of the $1,000,000 might then easily control not $2,000,000 but a much larger sum. Further, if the corporation taken over by a holding company control other corporations through the ownership of a majority of the voting stock, the extension of control may be very marked.

An illustration of this feature of the holding company is found in the case of the Atlantic Coast Line Company. This company with a capitalization of $10,500,000 owned in 1906 slightly over 50 per cent of the stock of the Atlantic Coast Line Railroad Company. This railroad in turn owned 51 per cent of the stock of the Louisville and Nashville Railroad Company. These two railways controlled another railroad through a lease, and the Louisville and Nashville jointly with the Southern Railway Company owned still another road. Thus "an ownership of slightly over $5,000,000 of capital stock in this holding company controlled solely and jointly through ownership and lease a railway system of over 11,000 miles in extent, with a capitalization of over $725,000,000." [1]

Interlocking Directorates. — Another means of securing united action on the part of different corporations that have mutual interests is through having the same person, or representatives of one person or group, on the board of directors of the different companies. The fact that one man has membership on the board of directors of different corporations is not in itself of much significance, for the two corporations may have no mutual interests. But if the interlocking of directorates amounts to a combination of business units it may be of great significance.

This form of combination comes about very naturally through men of means, especially bankers, becoming interested in mutually related concerns. It may come as the result of a plea for financial assistance either at the time of organization or later. In either case the giving of financial aid will usually be conditioned upon the right to participate in the management. A share in control may also be secured through the purchase of stock on the market.

An illustration of the concentration of power in this manner is found in the report of an investigation committee in 1913. This committee reported that Morgan and Company, the First National Bank, and the National City Bank, all of New York, held 341 directorships in 112 corporations having aggregate resources or capitalization of $22,245,000,000. These corporations were classified into five groups, namely, (1) banks and trust companies, (2) insurance companies, (3) transportation systems, (4) producing and trading companies, and (5) public utility corporations.[2]

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[1] Interstate Commerce Commission, Special Report, No. 1, quoted in L. C. Marshall, *Readings in Industrial Society*, 1918, p. 726.

[2] Marshall, *ibid.*, p. 724.

PROBLEMS AND EXERCISES

158. Mr. Zachary owns a store worth $10,000, a stock of goods worth $20,000, he has $8000 due on accounts, he owes $4200 for goods purchased, and has his store mortgaged for $5500, and has $700 in cash.

(*a*) Construct a balance sheet to show these facts.

(*b*) Assume the business to be incorporated and make a balance sheet indicating (1) capital stock of $50 par value; (2) capital stock of no-par value.

(*c*) How would the balance sheet be altered if the corporation made $7200? If $1000 is then paid in dividends?

(*d*) If a 50 per cent stock dividend should be declared by this corporation at the end of ten years, how will the balance sheet be altered?

159. "Corporations distribute their large earnings by issuing stock dividends." Is a stock dividend a distribution of earnings? Explain.

160. Should a corporation be taxed on its property and the stockholders on their stock? Explain.

161. "We must be allowed to raise the price of gas in order that we may make expenses and earn a reasonable rate of interest on our capital." A city gas company. Is the question of possible overcapitalization involved here? Discuss.

162. Under what conditions would it be to the advantage of the stockholders of a corporation to "overcapitalize"? Under what conditions would this not be to their advantage?

163. "The high price of gasoline is due to the overcapitalization of the Standard Oil Co." A Columbus, Ohio, paper, 1923. Discuss. "The high railroad rates are due to over capitalization of the railroads." A U.S. Senator. Discuss.

164. "How can Quaker Oats stock sell for $400 per share when it is really worth only $100 per share?" Clear up the difficulty of the author of this question.

165. The par value of the following common stocks is $100: American Car and Foundry, American Tobacco, Bethlehem Steel, United States Rubber, New York Central Railroad, and Wabash Railroad. Consult the financial page of a daily newspaper and find the prices at which these stocks are selling. Set these prices in one column and in two parallel columns list (1) the prices of the following $25 par stocks: International Nickel, Kelly-Springfield Tire, National Biscuit, Owens Bottle, and Willys-Overland; and (2) the prices of the following no-par stocks: Chandler Motor, Goodrich (rubber), Sinclair Oil, and Wilson & Co. What point in the text is illustrated by the prices of these stocks?

166. Argue against the taxation of corporate shares.

167. Argue in favor of the federal incorporation of those corporations that do an interstate business; in opposition.

168. How could the sugar refineries legally organize into a holding company when their organization into a trust was declared illegal in 1890?

169. Show how an interlocking directorate may militate against the welfare of the consuming public.

REFERENCES

A thorough account of the economic and financial organization and of the policies of corporations is to be found in the following books by A. S. Dewing: *Financial Policy of Corporations*, 1922, *Corporate Promotions and Reorganizations*, 1920, and *Corporation Finance*, 1922. C. W. Gerstenberg, *Financial Organization and Management of Business*, 1924, is equally valuable. W. Z. Ripley, in *Main Street and Wall Street*, 1926, discusses in a very stimulating manner the recent extensions in the absentee ownership of property. Much of this material is offered in the *Atlantic Monthly*, September and November, 1926, Vol. 138, p. 380 and p. 667. For a discussion by a business man, see R. S. Brookings, *Industrial Ownership and its Economic Significance*, 1925.

CHAPTER XIV

THE LOCATION AND SIZE OF THE ENTERPRISE

I. The Location of Enterprise

The site that is chosen for the location of an enterprise may be the determining consideration in respect to its success or failure. The following discussion will be devoted almost exclusively to a consideration of the factors that are involved in determining the location of manufacturing establishments. Among the many factors that are important in relation to the location of such enterprises are: (1) the accessibility of raw materials, (2) proximity to the market for the finished product, (3) adequate supply of labor, (4) cheap power for operation, and (5) financial assistance. The importance of these factors varies greatly from case to case. A discussion of each of them will indicate something of their relative importance in determining the location of various industries.

The Accessibility of Raw Materials. — Obviously, if all other things are equal, those manufacturing plants that are located near the source of the materials that are used have an advantage over those establishments that are further removed. In some cases, however, other factors are of such importance that proximity to raw materials does not determine the choice of location, as is evidenced by the superiority of England for a century and a half now in the manufacture of cotton. But in any case, firms must be located where there are adequate connections by railway or boat line with the raw material region.

In certain cases, the accessibility of raw materials is of commanding importance. If there is a large portion of waste in the material used, nearness to the source of the material is necessary. The perishability of the material used may also be a factor in respect to location. Thus vegetable canning establishments are usually located near the fields upon which the crops are grown.

In general, the importance of proximity to raw materials depends upon the relation of the value of the materials to the value of the finished product. If their value is very small relatively to the value of the manufactured product then the cost of transportation is of but little importance relatively to what it would be if their value were large relative to the value of the completed product. In other words, as the raw material is more and more highly refined in the manufacturing process the cost of it to producers is of decreasing significance.

Accessibility to Market. — Proximity to the possible consumers of a product may be important in determining the location of its manufacturer. But the cost of transportation is so low for most articles of commerce relative to their selling price, that the location of the manufacturing plants in relation to consumers is of little, if any, importance in many cases. For example, it costs only about three cents to ship a pair of shoes from Boston to Columbus, Ohio, and thus shoe firms that are located in Columbus have no appreciable advantage over Boston firms in supplying shoes to people in Columbus; or, again, as the freight charge on a suit of clothes shipped from Chicago to Los Angeles is only about 17 cents, Chicago firms are not at a disadvantage with California firms in supplying clothes to the California market.

But, if transportation costs are an appreciable part of the selling price of the finished product, an advantage accrues to the near-by firms, and, obviously, this advantage increases as the proportion of transportation cost to selling price is increased. Further, nearness to one's consumers may facilitate the receipt of orders and thus give an advantage in addition to that which comes from the saving in the cost of transportation. This is particularly true in the case of the manufacture of special machinery for other manufacturers, or of the manufacture of parts for a product completed by another.

The accessibility to markets in which equipment and material may be purchased is also important. Manufacturers must buy as well as sell. Nearness to centers that manufacture and repair equipment, or to dealers who handle materials and equipment may be an important factor in the success of an enterprise.

Labor Supply. — If work is to be conducted on a small scale and if no highly specialized technicians are required, the labor supply will not be an important item in determining location. But if a large number of laborers are to be employed it will be desirable to locate in or near a city of rather extensive population, or, if the work is to be highly technical, even in only a few of its aspects, an advantage will be secured in locating in a region where the line of manufacture that is contemplated is already established, in order to secure the skilled labor that is required. If the employment of women is contemplated, a location adjacent to such industries as coal mines, or iron and steel works where men are employed will be desirable.

Power. — The availability of power is often a factor of considerable importance in determining location. Thus if coal is to be used, there may be a marked advantage in locating one's plant near coal mines. This has in the past been of particular importance as is evidenced by the location of many manufacturing establishments in the coal belt of this and other countries. The developments that are now taking place in the generating of electric current, as noted in Chapter III, will undoubtedly make location in coal areas of less importance to manufacturers than it has been.

Financial Assistance. — The securing of financial assistance from men of means and from bankers is often of importance in determining the location of an enterprise. The availability of money funds in most communities for projects that give promise of being successful accounts in part for the presence of manufacturing plants in most small cities and towns. Such plants may not be affected appreciably by the factors that have been noted, or, in so far as the factors are of importance they may be counteracted by the opportunity of securing financial assistance from acquaintances.

The Localization of Industry. — The above analysis suggests the many reasons that account for the phenomenon of localization of industry which was referred to in Chapter III. If a region offers advantages to a certain firm because of any one of the factors mentioned above, for a similar reason other establishments of that kind may be expected to locate there. Further, some of the factors listed are of increased importance after a start has been made in one locality. If technical labor is needed, the possibility of finding it in a region where such manufacture already exists will be a big item in influencing a new firm to seek such a locality. Also, in such a place, equipment and repairs for equipment may be secured more conveniently than elsewhere. Then, too, sellers of raw material and buyers of product will frequent such a place, and lastly, financial assistance will tend to be more available for new firms than it would be in other localities where bankers are not acquainted with the problems of the industry in question.

It is also interesting to note that wholesale and retail merchants dealing in similar articles tend to congregate in groups. This comes in part from the desire of newly established firms to locate where buyers are accustomed to go for the goods in question. Location out of the region that buyers frequent may prove to be very unprofitable. Outlying department stores, for example, often encourage rival stores to locate near by. The attraction of additional customers to that locality by the presence of another store may enable the one to gain much more than it will lose by having some of its former customers patronize the new firm.

II. The Size of Establishments

There are great differences among industries in regard to the size of undertaking that proves to be the most successful. Some are adapted to very large scale operation, some to extremely small scale, and many to some intermediate scale of operation. The factors that promote large scale enterprise in certain types of manufacturing will be considered first.

Large Scale Operation. — (1) *Specialization.* — Perhaps the principal advantage that comes to certain industries from the conduct of business on a large scale is derived from the high degree of specialization that is thus made possible. Specialization permits the assignment of tasks according to the natural abilities of persons. The gain from this may be expected to be very considerable. The specialization of work also makes it possible to train persons to do certain tasks with a high degree of proficiency. It also results in economies due to a saving in the time and energy that are normally required in turning from one task to another.

The specialization that accompanies large scale operation also makes it possible to produce or install specialized equipment whose price would be prohibitive to a small scale producer. The International Harvesting Machine Company, for example, has a machine that is used in shaping poles for wagons and harvesters. The machine cost $2500 and saves one cent on the cost of each pole; its use is advisable only because of the large number of poles that the company needs each year.[1] The elaborate system of belt conveyers that are used by Sears and Roebuck in filling mail orders, and by Henry Ford in assembling an automobile are money-saving devices only because of the extensive use that may be made of them.

Further, large scale operation makes it possible to use more continuously the equipment that is essential even to small scale production. This of course tends to reduce the cost of each unit of output when expensive equipment is required such as heavy cranes in machine shops and steel mills.

(2) *Marketing.* — Large scale operation may also lead to economy in the buying of materials and in the selling of product. The Ford Motor Company, for example, is undoubtedly able to buy material at a unit cost that is much below the amount that a small scale producer would have to pay. Indeed, the following news item is perhaps indicative of the usual advantage that this company has. "For the first quarter of this year Ford had bought sheet steel at from 4.90 c. to 5.10 c. while other buyers paid 5.35 c. or close to that figure."[2] The wholesale principle of selling applies to firms that dispose of their products to a single plant.

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[1] F. W. Taussig, *op. cit.*, Vol. I, p. 52.

[2] *New York Evening Post*, April 26, 1924, Sec. II, 3.

In certain cases the selling of products may also be conducted more advantageously by a large scale than by a small scale producer. The larger volume may make possible a larger volume of sales by each salesman or agency, and thus reduce the unit cost of marketing the product. Advertising may also be less expensive per unit if the volume to be sold is large than if it is small.

(3) *Utilization of Waste Materials.* — Another important source of gain to many large scale industries is the opportunity which such a scale of operation gives for the utilization of waste material. In the packing house business, to use the classical illustration, almost every particle of the slaughtered animal is used in the production of some commodity. This obviously cannot be done by a local butcher. Wherever there are waste materials in a manufacturing process, the larger the scale of operation the greater is the possibility that facilities may be developed for utilizing them. The commodities that are thus produced incidental to the production of the principal commodity are commonly called by-products. They are sometimes referred to along with the principal commodities as joint products.

(4) *Diversity of Products.* — If an industry is conducted on a large scale, it may be possible without sacrificing the economies of specialization to produce a variety of products. This would mean in reality that several large scale operations were conducted together. Such diversification of production may be very beneficial to a firm by making it more independent of fluctuations in the general business conditions of the country, for since a business depression is not likely to affect equally the sale of different products, a firm that manufactures several articles is less likely to suffer from a period of poor business than if it is devoted to the manufacture of only one. Diversification of products may come, of course, from the utilization of waste materials.

(5) *Research and Invention.* — The final advantage of large scale production, to be noted here, is the possibility of conducting research. The maintenance of a large corps of highly trained

technicians who devote themselves exclusively to studying the problems of a given industry is impossible except to the concern that does business on a large scale. Such study and experimentation tend to result in gains to the firms that can undertake research. Almost all of the large business concerns of America have extensive research departments. This is clearly a marked advantage of conducting business on a large scale.

Non-manufacturing Enterprises. — The five advantages which have been listed as pertaining to large scale manufacturing also apply to some degree in the case of mercantile and financial enterprises, the transportation business, and mining. The application in each case is perhaps sufficiently clear to make further comment unnecessary.

The Combination of Enterprises. — The advantages of large scale operation, and also the desire of business men to do business in a large way, have led to the formation of many business combinations. Such consolidations of business firms are usually classified into horizontal and vertical combinations. A horizontal combination is one in which the various firms that combine are all engaged in the same kind of work. Thus a consolidation of bakeries, or grocery stores, or cotton manufacturers would be a horizontal combination.

A vertical combination is one in which the different firms together produce a series of products that are part of one product. Thus the inclusion of iron mines, coal mines, railroads, ships, and the mills and plants in which iron ore is refined and carried through the various stages of manufacture to the finished steel product is an illustration of a vertical combination. The United States Steel Corporation is a typical vertical combination. The grouping of related industries in this way under one management is also sometimes described as an *integration* of industries.

The Economies of Horizontal Combination. — A combination may, of course, prove to be profitable by enabling some or all of the gains that attach to large scale operation to be realized more fully than would otherwise be possible. The combination of plants in different parts of the country may lead to some reduction in freight costs through a careful division of the territory to be served among the different plants. Losses due to labor strikes may also be less to a given number of plants if they are owned by one company than if each is under the control of a separate company. The diversion of work from one to another in the case of a strike may greatly reduce the loss to the group as a whole. The possibility that this may be done will also tend to make labor leaders less hopeful of winning in case a strike is called.

It is further claimed that gains may be made in a horizontal combination by pitting the different units against each other in friendly rivalry. It is possible that rivalry may be more effectively used under such conditions than if the various plants are under separate managements, as the standards for comparison may be made very definite. Then, too, any improvement in one unit may be quickly installed in the other units of the combination.

The Economies of Vertical Combination. — A vertical combination of industries may also, of course, lead to savings by making it possible to secure more fully the advantages that pertain to large scale operation. The principal gains, however, are likely to come from a better coördination of the various work processes, and from the ability to escape from the high prices that might be charged if materials or services were purchased from independent companies. The coördination among the various units in a vertical combination reduces the loss that frequently comes from producing a larger quantity of a given commodity than can be sold. There is, for example, but little possibility that more ore will be taken from the mines of the United States Steel Corporation than is needed at the mills. Any change in the market for the finished product tends to be quickly reflected to the various units in the productive process. Further, both horizontal and vertical combinations may prove to be highly profitable to the persons interested in them through the giving of monopoly power, and thus enabling high prices to be charged. But in such a case they are liable to prosecution under the anti-trust laws of the various states and of the United States government.

Limitation upon the Size of Establishments. — The advantages of large scale operation apply only within limits. As the size of establishments increases, the possible gains from the advantages that normally accrue to large scale operation become less and less. The degree of specialization, for example, cannot be increased indefinitely as the scale of operation increases. Further, definite losses begin to appear as the size of an establishment increases beyond a certain point. This point varies according to the nature of the industry and, also, according to the ability of the manager.

The principal limitation on the profitable size of plants is found in the mental capacity of managers. There are marked differences among men in respect to mental ability, but there are strict limitations upon each one. No mind is able to cope with an ever-increasing number of problems. There are many men who can direct the work of fifty persons, but there are not many who can efficiently direct 5000 and still fewer, of course, who can direct larger groups. In terms of money, many men, but not all, by any means, can use successfully $5000 in business, but as the figure increases the number of men who are capable of directing its expenditure becomes fewer and fewer, and finally a point is reached that is beyond the grasp of any man.

This limitation is more exactly stated in terms of the number of employees than in terms of money. A business may call for a very large expenditure of money in equipment but require so few employees that the problem of management is relatively simple as compared with the utilization of a similar amount of money that is largely used in the employment of labor. As the number of employees increases, the possibility of the manager's superintending the work of each one becomes less and the details of management must be divided among an increasing number of subordinate managers, and rules and regulations must be devised that necessarily result in waste of time and energy.

But the number of employees, to carry the analysis further, does not alone determine the limit in managerial ability, since the management problem varies considerably with different classes of employees. The limiting point is reached much more quickly if a high degree of skill is required, than if the employees devote themselves to tending machinery. The one kind of work calls for close direction and supervision while the other does not. Highly skilled processes accordingly tend to be carried on by small scale enterprises, while machine work is conducted in large establishments.

Further, of course, even if no special amount of skill is required the same considerations apply, if the work must be done by hand. With no offsetting gains from the use of expensive equipment or from the fuller utilization of equipment, the loss involved in supervising the work of an increasing number of persons will be manifest at once. Thus according to Dewing, writing in 1921, the American Tobacco Company was so successful in the manufacture of cigarettes, a machine process, that soon after the company was organized in 1890, it was producing 90 per cent of the total yearly product for the country, but it made no headway at all in securing a dominant position in the manufacture of cigars in spite of a large investment of capital and uninterrupted efforts for upwards of twenty years.[1] Cigar making during this time was a hand process and the most economical shop was the one that employed but few laborers. Recently, however, a machine has been perfected for the manufacture of cigars. If this machine proves to be efficient it may confidently be expected that cigar manufacturing will be conducted on a large scale basis.

But even in work adapted to large scale enterprise there is, to repeat, a definite limitation as to the most profitable size of enterprise. Dewing states the matter as follows:

> "Economies are inevitable as the business increases in size. These economies are, specifically, different in different businesses, but in general are connected with those parts of the business which are not concerned with personal judgment or individual skill and attention to detail. The economies are incidental to the automatic phases of the business. On the other hand, as the business enlarges certain wastes creep in which increase with greater rapidity than do the economies. These wastes, in contrast to the economies, pertain to all phases of the

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[1] A. S. Dewing, *The Financial Policy of Corporations*, 1921, Vol. IV, pp. 29, 30.

business where personal skill is required. They pertain to what one might call the humanities of business. The critical point in the expansion of any business is reached when the wastes incident to mere size overcome the economies. Before this point is reached the economies increase more rapidly than do the wastes; beyond this point the wastes exceed the economies. To determine the point is, as suggested before, a matter of very nice business judgment. Men who otherwise command that remarkable combination of shrewdness and courage, of unemotional judgment and intuitive daring, which distinguishes the truly great business executive, often fail in this very matter of perceiving the point of expansion beyond which their business suffers from the practical application of the law of balanced return." [1]

It is very interesting to note in this connection the results of a study which Dewing made of the earnings of twenty-nine industrial combinations which he selected at random. He reports his findings as follows:

"Only twelve of the twenty-nine consolidations had earnings during their first year of existence equal to the earnings of the separate plants before consolidation; and four only had earnings equal to the estimated earnings. The majority of them were formed during the earlier stages of a boom, so that general economic conditions were in their favor rather than against them. The average earnings for ten years were in seventeen cases out of the twenty-nine less than the earnings of the independent plants, and in twenty-four cases less than the anticipated earnings. In fact, looking at these statistics in terms of broad averages it would appear that the industrial consolidation never attained, even approximately, the expectations of its promoters." [2]

The Survival of the Small Firm. — As stated in Chapter III the small firm has not disappeared. The analysis in the preceding section indicates certain reasons for this. Highly skilled work does not lend itself to large scale operation nor does hand work even if it is not skilled. A further consideration in promoting small scale manufacture of articles of exquisite design is that there might be such a limited market for them that they could not be produced on a large scale even if the quality could be maintained under such processes. Perhaps of more significance in this connection is the point that in order to sell such articles to the rich, it is normally necessary to keep them out of the hands of the poorer classes. Thus "good business" may lead a man to produce on a small scale and sell at a high price to a small clientele, rather than to produce on a larger scale and depend upon lower income groups for patronage. As the demand for exclusive articles of consumption seems to be a part of economic progress, we can expect that the efficiency of large scale operations will carry with it a demand for the goods of "small masters."

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[1] Dewing, *ibid.*, Vol. IV, p. 31.

[2] Dewing, *ibid.*, Vol. IV., pp. 42, 43.

The recent developments in the use of electricity as power may also be expected to promote small scale operations. The use of coal for power gave great encouragement to large scale operations. The equipment necessary for the economical production of steam called for a large plant in order that the steam might all be used. The present-day tendency toward the use of electric current will remove this advantage of large scale operation. This is particularly true since even the large firms now find it economical to buy electric current from the public utility companies, rather than generate their own electricity as was their practice until recently. This means that the small company is able to get power as cheaply as the large establishment. In many cases, this may make small scale operation economical where otherwise it would not be feasible.

Repair shops represent a type of small scale enterprise that we may confidently expect to remain with us. Small retail shops may also be expected to hold their own against the large department stores. The limited equipment of such shops may be so fully utilized and the sales force so well supervised that the advantage of the large store may easily be matched. Further, a specialty shop may buy in such quantities that it can do as well in purchasing as a department in a large store.

Reference should be made in this connection to the data given in Chapter III, relative to small scale establishments in manufacturing. In 1919, 97.9 per cent of the manufacturing establishments having products valued at $500 or more, employed fewer than 251 employees per establishment, and 81.3 per cent of the total, employed fewer than 21 wage earners. Clearly, the small shop is still with us.

PROBLEMS AND EXERCISES

170. Appraise the relative advantages of locating an automobile factory in Columbus or in Detroit.

171. Once rubber manufacturing was started in Akron, what factors probably encouraged the extension of this industry in that city?

172. In which of the following industries would you expect to find large scale operation most developed? in which least developed? Explain. Medical service, the packing industry, truck farming, automobile manufacture, telephone service, book publishing, weekly newspaper, iron and steel manufacture, anthracite coal mining, retail groceries, and the oil industry.

173. Distinguish between large scale operation and combination of enterprises.

174. Can a business combination be both a horizontal and a vertical combination? Explain. If such a twofold combination were possible, what economies would result from the horizontal aspect of the combination? From the vertical?

175. "The chain theater will crush out the individual exhibitor." Is this likely to be true? Is it as likely to be true in the grocery business as in the theater business? Analyze and compare the two cases.

176. With respect to managerial ability, which is the more limited in the size to which it may grow, an electric power producing industry or a watch factory? Why? How is size measured in this case, by the investment in plant or the number of employees?

177. Does combination necessarily mean increased earnings? Explain.

178. What effect will an increased development of the automatic machine have upon the size of establishments? Why?

179. In which of the following will combination into chain systems most likely be carried furthest? Why? Jewelry repair shops, barbecue shops, hardware stores, men's ready-to-wear clothing stores, tailor shops, dry-cleaning establishments.

180. "Fifty years from now the small firm will be an anachronism." Discuss.

REFERENCES

For a short treatment of the factors affecting the location industries see *The Localization of Industry*, Twelfth Census of Manufactures, part i, p. cxc. The book by Dewing that is referred to in a footnote above gives detailed information in regard to his case study of the limitations upon the size of establishments. The various books listed in the appendix discuss the various features of this subject.

CHAPTER XV

THE PROPORTIONS OF ECONOMIC AGENTS IN AN ENTERPRISE

The problem of the size of a business which was discussed in the preceding chapter is merely part of a larger problem; namely, that of the proportions in which various economic agents shall be used in each enterprise. The matter of size alone is the problem of the proper proportion or relation between the size of the business and the capacity of the manager.

The proportions that prevail in business enterprises are very important. Indeed, proper proportions are as significant in the making of a successful enterprise as in the making of a successful cake. Just as the nice balancing of the various ingredients, including heat, is the test of a successful cake baker, so, similarly, the nice apportionment of land, buildings, equipment, power, and labor to each other and the total to himself is the test of a successful business man. The fundamental economic problem of proportions was discussed earlier;[1] it is that of the desirable proportions between the number of persons and natural resources, or, in short, the problem of population. This problem was discussed in terms of diminishing returns. Similarly, all of the problems of proportions can be stated in terms of diminishing returns.

Diminishing Returns. — It will be recalled that in the discussion of diminishing returns in the case of the increase of a population, the natural resources were assumed to be constant and the people were assumed to use a given method in utilizing the resources. Under such assumptions, an increasing population will for a time result in an increase in the average output per person, but finally a point will be reached at which a further increase in numbers will result in a decrease in the average prod-

[1] Chapter VII.

uct per worker. When this point is reached, the country is said to be in the stage of diminishing returns. Improvements in method, however, may accompany an increase in population and thus prevent the average product per person from decreasing, or in other words prevent the country from getting into the stage of diminishing returns. The fundamental fact in accounting for diminishing returns, it will be recalled, is that the services which the natural resources will yield are necessarily limited. This is true of any economic good. No economic good can give infinite returns.

The stage of diminishing returns does not, however, mark the limit of capacity of an economic instrument. Output is increasable within the stage of diminishing returns, but at a diminishing rate for the agent that varies in amount, until finally the largest possible output is secured. Business managers are not usually interested in securing the maximum output from an economic agent as, for example, a furnace, a factory, or a milch cow. Additional units of coal may increase the output of heat from a furnace, but it may not be profitable to buy more coal in order to get the additional heat; another laborer may increase the output of a factory, but the output may not be increased enough to warrant the payment of the wages necessary to hire the extra man; more feed may increase the yield of milk from a cow, but the value of the additional milk may not be equal to the cost of the additional feed.

These illustrations indicate the problem of proportions that all business men face. No one is unaware of them. In the simpler relations common sense usually indicates approximately the proper proportions; but in most cases the proper proportions can be ascertained only after the careful measurement of various experiments. In addition to indicating the basis for such calculation, the following discussion will call attention to a number of interesting points connected with the subject concerning which there is a great deal of confusion.

Taylor's Table. — Professor F. M. Taylor, of the University of Michigan, has analyzed this subject in a remarkably searching manner. He has constructed the following table to illustrate his discussion. This table is similar to, but more elaborate than, the table used above in Chapter VII. One of the columns of figures which he uses is omitted here as its use does not fit in well with the terminology of this book. The explanation of the table which follows is copied from Taylor's book.[1] The subsequent discussion is based upon his analysis, but is not given in his words.

> "In this series of imaginary experiments we use each time 20 units of one of the factors, which we will call *N*, and combine with these increasing quantities of another kind of factor, which we will call *L*, using first 2 units of these *L's*, then 3 units, the next time 4 units, and so on. These figures are given in the second and third columns of our table, — the first column being used merely to show the *number* of the combination. The quantity of output which results from each of our imaginary combinations is of course *assumed arbitrarily*, and appears in the fourth column. Thus the fifth combination, using 20 *N's* with 6 *L's*, is supposed to give 84 units of products, and the ninth combination, using 20 *N's* with 10 *L's*, to give 200 units of product.
>
> "As just indicated, the figures of the second, third, and fourth columns contain the *assumed* conditions and the *assumed* general results of our series of imaginary experiments. In contrast, the figures of the remaining columns are *derived* from the data assumed in the preceding ones. . . .
>
> "The figures in this fifth column . . . represent the *actual* increase in output, and are, of course, obtained for any particular combination by substracting from the total of that combination the total of the combination next preceding. Thus from the 312 output of the thirteenth combination, we subtract the 290 of the twelfth and get 22, the actual increase for the former combination, and this figure, therefore, appears in the fifth column. . . .
>
> "The figures in the sixth column give the *average total output* for the corresponding combination *measured in N's*. Thus the figure 14.5 in this column for combination 12 means that the average output for each of the 20 *N's* in this combination is 14.5. That figure is of course obtained by dividing 290, the total output for this combination, by 20, the number of *N's* used. The figures of the seventh column similarly show *the average total output measured in L's*. Thus the 18.1 appearing in this column under this same combination means that the average output for each *L* is 18.1, a figure obtained by dividing the total output, 290, by 16, the number of *L's* in this combination.

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[1] F. M. Taylor, *Principles of Economics*, 8th ed., 1922, p. 126 ff.

TABLE 8

TAYLOR'S TABLE

No. of Combination	*Amount of N's*	*Amount of L's*	*Output*	*Actual Increase*	*Average in N's*	*Average in L's*	*Marginal Product of L's*
I	II	III	IV	V	VI	VII	VIII
1	20	2	2	..	.1	1	..
2	20	3	6	4	.3	2	4
3	20	4	16	10	.8	4	10
4	20	5	35	19	1.7	7	19
5	20	6	84	49	4.2	14	49
6	20	7	126	42	6.3	18	42
7	20	8	156	30	7.8	19.5	30
8	20	9	179	23	8.9	19.8	23
9	20	10	200	21	10	20	21
10	20	12	236	36	11.8	19.7	18
11	20	14	266	30	13.3	19	15
12	20	16	290	24	14.5	18.1	12
13	20	18	312	22	15.6	17.3	11
14	20	20	330	18	16.5	16.5	9
15	20	22.2	346	16	17.3	15.6	7.2
16	20	25	362	16	18.1	14.5	5.7
17	20	28.5	380	18	19	13.3	5
18	20	33.3	393	13	19.6	11.8	2.6
19	20	40	400	7	20	10	1.1
20	20	44.4	398	All Decreases	19.9	8.9	All Minus Quantities
21	20	50	393		19.6	7.8	
22	20	57.1	360		18	6.3	
23	20	66.6	280		14	4.2	
24	20	80	140		7	1.7	
25	20	100	80		4	.8	
26	20	133.3	40		2	.3	
27	20	200	20		1	.1	

"Finally, we have in the eighth column, the *addition* to output which follows upon the addition of *one* unit of *L's*. Thus the 12 appearing in this column under the twelfth combination means that for each new *L* appearing in this combination, 12 more units of product appear in the output. This figure is of course obtained by dividing 24, the total amount added, by 2, the number of *L's* added. In the first 8 combinations the figures for this column are the same as those which appear in column 5 . . . , because in each case there is but one L added, and so division by the number of L's does not alter the figure of the addition.

". . . No actual combinations of factors behave in precisely the way indicated in this table; but the general course of things is strictly regarded. We have but to follow the figures given in the fifth column to see that, for the first 9 combinations, output increases *more* than proportionally [the average output per L increases]; that, for the next 10 combinations, it increases *less* than proportionally [the average output per L decreases]; and that, for the last 8 combinations, it *absolutely diminishes*. In short, it passes through the 3 stages through which real combinations pass [increasing, diminishing, and maximum returns]. Accordingly, we can safely use the figures of this table to bring out in definite and precise form the points directly or indirectly involved in our principle."[1]

The Average per L and per N. — It will be noted by referring to Taylor's table that the average output per L increases up to and including the 9th combination, and then decreases throughout all of the other combinations. The average output per N, however, increases up to and including the 19th combination. In other words, as the 20 N's are used more and more intensively, the total output increases and thus the average per N increases until finally a point of maximum returns is reached at the 19th combination. But when the average output per L reaches the maximum, at the 9th combination, the 20 N's are, by definition, in the stage of diminishing returns.

If L's and N's Were Reversed. — It was emphasized above that the principle of diminishing returns is of universal application. Hence, it is as true of L's, whatever they are, as it is of N's. The table could be altered by making the L's constant, and N's varying. There would then be a point corresponding to combination 9 when the average output per N would reach the maximum and then decrease, and also a later point corresponding to combination 19 when the total output would reach a maximum. Diminishing returns for L's would then be reached at combination 9; but in the table as constructed we have no data of diminishing returns for L's. It is the 20 N's for which returns are said to diminish beginning with combination 9 in the table.

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[1] The matter in brackets is not in Taylor.

More realistically, any economic agent could be assumed to be represented by *N* and a corresponding one by *L*. The *N's*, for example, might represent a furnace and the *L's* coal; or *N's* a milch cow and *L's* feed; or the *N's* a factory and the *L's* laborers; or *N's* a business manager and the *L's* units of plant. Each of these pairs of things, as they are combined in actual practice, shows results that are comparable to the data in the table. There is first a stage of increasing average returns per unit of the varying agent, then a stage of decreasing average returns per unit of the varying agent, and then a stage of maximum total returns. Combinations 9 and 19 are found universally, the one lies between the first two stages indicated and the other between the second and the third stages.

The Definition Again. — To further clarify the definition, it should be emphasized that the table shows diminishing returns for the 20 *N's*, not for *L's*. There are no data in the table relative to diminishing returns for *L's*. Returns per *L* diminish beyond combination 9, but this, by definition, shows diminishing returns for the 20 *N's*, not for *L's*. "Diminishing returns" is a term that is used only in reference to a fixed, unchanging agent for the time being, such as 20 *N's*, or the natural resources of a nation, or a machine, or a factory, and diminishing returns for that agent begin when the *average* output per unit of the varying agent that is used with it, such as *L's*, or population, or labor, reaches the maximum and is on the point of decreasing.

Further, it should be noted, as emphasized in Chapter VII, that diminishing returns for the 20 *N's* do not begin when we go from combination 5 to combination 6. The addition made as a result of each additional *L* begins to decrease at this point, but the average returns per *L* continue to increase until we pass from the 9th to the 10th combination. It is the 9th combination, then, that marks the beginning of the stage of diminishing returns. The phenomenon of a reduction in the amount added to the total as a result of using additional *L's* (column VIII, combinations 5 to 6) may in many cases appear at the same combination at which the average returns per *L* begin to decrease as more *L's* are used (column VII, combinations 9 to

10). This table might easily be altered to make that the case here. If the figures for output (column IV) were made to increase much more uniformly than they do — if they began as in the table 2, 6, 16, and then continued, for example, as follows: 38, 52, 68, 86, 106, 127 and 144, the 127 output would then correspond with the 200 output in the table and would mark the highest average per *L*. It would be combination 9. But also the addition made as a result of each added *L* would increase up to this point. Columns VII and VIII would then be synchronous. However, if these two columns are not synchronous, if the largest amount added by the addition of an *L* comes before the point of largest average returns per *L*, it is the latter that marks the point at which diminishing returns begin.

Physical Returns and Cost per Unit. — The discussion thus far has been in terms of physical output, for the problem of diminishing returns is a physical problem, not a value problem. But a value problem arises out of it. Indeed, two value problems come from it. One is the problem as to the combination that will give the least cost per unit of output, and the other is the problem as to the combination that will give the largest possible profit. Least cost per unit and the largest possible profit may be found at the same combination, but again they may not, as will be demonstrated later. First, we shall consider the problem of least cost per unit of output.

We must assume that both the agents used — the *N's* and the *L's* — cost something. If they did not, or at least unless one of them did, our problem would not be an economic one. Since both the *N's* and the *L's* involve an expense, the combination of least expense per unit of output will depend on the relative cost of each in relation to the output. Reference to the table shows that the least cost combination could not be found before the 9th combination, because the output per *N* and the output per *L* (columns VI and VII) both increase up to and including the 9th combination. Under these conditions the cost per unit of output must grow less regardless of the cost of *N's* or *L's*, as the 9th combination is approached.

It is also evident that the least cost combination could not be found beyond the 19th combination. The total output decreases beyond this combination, and thus the average output per *N* and per *L* also decreases. Hence, cost per unit of output could not fail to increase beyond combination 19.

The combination that will give the least cost per unit of output is thus always found from the 9th to the 19th inclusive. It lies within the stage of diminishing returns — within the group of combinations of agents that result in an increase in the output but an increase at a diminishing rate per unit of varying agent, that is, *L*. Hence, the common remark to the effect that it is unfortunate that one's factory or farm should be worked in the stage of diminishing returns is inaccurate. It is only in case the fixed agent, the factory, farm, or machine, is used in the stage of diminishing returns that the output can be secured at the least possible cost per unit.

Thus far we have seen that the least cost per unit of output will be found either at the 9th or the 19th combination, or somewhere between these two. The 9th combination gives the largest possible output per unit of *L's* and the 19th the largest possible output per unit of *N's*. Hence, if *L's* are very expensive and *N's* are very cheap, the 9th combination will be the one of least cost. If, on the other hand, *N's* are very expensive and *L's* very cheap, the 19th combination will give the least cost per unit of output. Or, if *N's* are very cheap and *L's* very dear, the 9th combination will be the least expensive, but any appreciable decrease in the cost of *L's*, or any appreciable increase in the cost of *N's* will mean that the least cost combination will then be found beyond combination 9 toward combination 19. If, for example, land is very cheap and if labor is very high, the least cost per unit of output will be found at the beginning of the stage of diminishing returns, at combination 9. But if land is very expensive and if labor is very cheap, then the least cost per unit of output will be found when the land is used intensively, as at combination 19. Similarly, if pigs are cheap and feed is high, the least cost per unit of pork will be found before the hogs have reached their maximum weight — before combination 19 is reached, if *N's* represent pigs and *L's* feed.

But if pigs are very expensive and feed is very cheap then the least cost per unit of pork will be found when the hogs have reached their maximum weight — combination 19.

These conditions may be further illustrated by assigning cost figures to the *N's* and *L's* in Taylor's table, as has been done in compiling the table which is given below.

TABLE 9

LEAST COST COMBINATIONS WITH VARYING COSTS FOR *N's* AND *L's*. BASED ON TAYLOR'S TABLE

If Each N Costs	*If Each L Costs*	*Combination Giving Least Cost per Unit of Output*
$0.10	$2.00	9th
0.20	2.00	10th
0.40	2.00	11th
0.80	2.00	11th
1.20	2.00	13th
3.00	2.00	15th
5.00	2.00	17th
10.00	2.00	17th
20.00	2.00	18th
40.00	2.00	19th
10.00	200.00	9th
10.00	100.00	10th
10.00	50.00	11th
10.00	25.00	11th
10.00	16.66	13th
10.00	6.66	15th
10.00	4.00	17th
10.00	2.00	17th
10.00	1.00	18th
10.00	.50	19th

If *N's* are assumed to cost 10 cents each and *L's* $2 each, the total cost in the 9th combination will be $22, for an output of 200 units. This will mean an average cost of 11 cents per unit. The 10th combination with the same cost figures will give a total cost of $26 for an output of 236 units. The average cost per unit would thus be 11.02 cents at combination 10, if *N's* cost

10 cents and *L's* \$2 each. The 9th combination thus gives a lower cost per unit than does the 10th combination. This being true it is apparent that any later combination will involve a still larger cost per unit of output. If, however, *N's* cost 20 cents each instead of 10 cents each, then with a cost of \$2 per *L*, the least cost combination in Taylor's table will be found to be the 10th one, and if *N's* should cost \$1.20 each and *L's* \$2 each the least cost combination will be the 13th. Lastly, if *N's* should cost \$40 each and *L's* \$2 each, the least cost combination will be the 19th as is indicated in the table.

These relationships between the cost per *N* and the cost per *L* are also indicated in the second part of table 9. This portion of the table is constructed by assuming a constant cost per *N* and a varying cost per *L*. The two portions of the table are identical so far as the relative costs of *N's* and *L's* are concerned, as the relative costs per *N* and per *L* at each combination are the same in the two portions of the table. Hence, the least cost combinations are identical in both parts of the table. They indicate, to repeat, that any increase in the cost of *N's* relative to the cost of *L's* results in the least cost combination being found in a more intensive use of *N's* and a less intensive use of *L's;* that is, in a combination that lies toward number 19. And, to turn this statement about, the table shows that any increase in the cost of *L's* relative to the cost of *N's*, results in the least cost combination being found in a less intensive use of *N's* and a more intensive use of *L's;* that is, in a combination that lies toward number 9 rather than toward 19.

The combinations of economic agents that business managers have to make seldom, if ever, involve only two agents. Seed, fertilizer, and machinery must be added to labor to form a working combination with land in the growing of crops. And in a manufacturing process, land, buildings, machinery, power, raw materials, labor, and supervisory labor must be combined. Actual problems of combination are far more intricate than is assumed in Taylor's table. But, however complex a problem the combination of economic agents may be, it is essentially the same as that indicated in the table. The greater the cost of one agent relative to the others the more intensively that one should be used and the less intensively the others should be used in order to secure output at the least cost per unit. To work the problem out nicely, a series of experiments would have to be made and tabulated as in Taylor's table, and then on the basis of the cost of each agent the least cost per unit of output could be found.

Perhaps it is well to emphasize again the point that the least cost combination is found within the stage of diminishing returns; and if the fixed agent, the *N's*, is expensive relative to the agent that may vary in amount, the *L's*, the least cost per unit of output will be found far within the stage of diminishing returns. If, however, the cost of the agent that may vary in amount is the only cost considered then the least cost per unit of output will be found just at the beginning of the stage of diminishing returns. Diminishing returns and increasing costs are the same only in case the cost of the agent that varies in amount is alone considered. Diminishing returns for *N's* and increasing cost of product per *L* both begin at combination 9 and extend to, and include, combination 19. But considering total costs, diminishing returns and increasing cost per unit of output are not the same.

The Most Profitable Combination. — As was stated earlier in this chapter, the least cost combination is not necessarily the most profitable one for a business manager to employ. This seeming contradiction of terms is resolved by noting that the market for a product may be dull and thus the inability of a manager to dispose of his output may make it more profitable for him to use an earlier combination than the one that would give the least cost per unit of output. If, for example, the costs of *N's* and *L's* are in the ratio of 3 : 2, then according to table 9, the 15th combination is the one that will give the least cost per unit of output. This combination, if a firm is employing 20 *N's* and 22.2 *L's*, will give an output of 346 units according to the table. But it may not be possible to sell this number of units at a satisfactory price. Perhaps only 200 units could be sold at such a price. Then the firm would find it advisable to use only 10 *L's*, not 22.2 *L's*, and to operate at combination 9. Rather than speak of this combination as being more profitable than the 15th in this case, it would be better to say that the 9th is less unprofitable than is the 15th, in view of the state of the market for the given product.

To alter the above illustration, if it were possible to sell only 126 units, then the person in question might lose less by working in the 6th combination than in any later one. This combination, however, will yield him only 18 units of output per each *L* used. The 9th will give him an average output of 20 per *L*. Hence, it will be to his advantage to use only part of his *N's*, if that is possible, and have a 2 : 1 combination of *N's* and *L's* as in combination 9. This can be accomplished if *N's* are acres of land, or divisions of a factory, but it cannot be done if the *N's* represent a machine or a factory that is indivisible.

Assuming the *N's* to be acres of land, clearly, in terms of the table, if fewer than 200 units are to be produced, it is better to have part of the land lie idle and get a return of 20 units of output per each labor unit, than to use the same amount of labor on the entire tract of land and get fewer units of product per each unit of labor. If the fixed agent is divisible, the point of diminishing returns for part of this agent is always more profitable than is the use of all of it at any preceding combination. This follows from the conclusion reached earlier that the combination marking the beginning of diminishing returns represents a less cost per unit of output than do any of the preceding combinations, whatever may be the cost of each agent.

But, as suggested, if the fixed agent, the *N's*, are not divisible, then the combination at which one will lose least may be found before 9 is reached. A manufacturing firm may be in receipt of so few orders that it cannot operate its factory at combination 9 with a return of 20 units of output per *L*. The few orders that it has may, however, make it advisable for it to continue operations even at combination 5, with an average output per *L* of only 14 units of product. Assuming the least cost combination in such a case to be, say, the 18th combination, the owners of the factory would then be losing heavily. Another way of phrasing this is that such a factory would have required a relatively large outlay of money for its construction, and that the owners would need to use it intensively in order to recover their investment. This follows from the assumption that the 18th combination is the one of least cost, for this means that *N's* are relatively very dear as compared with *L's*. But in the case assumed they cannot sell the output (393 units) of the 18th combination. They can sell only 84 units. Hence, they will lose less by working the factory in the 5th combination than in any other.

A more exact formulation of the point under consideration runs in terms of a comparison of the value of the additional output at each combination, with the cost of the additional *L's* at the corresponding combination. If, for example, *L's* are laborers and if the wages of a laborer are slightly less than the value of 11 units of output but more than the value of 10 units, 18 men will be hired and operations will be carried on at combination 13. In such a case two more men, 20 in all, could not be hired profitably for as a result of adding them to the workforce the output would be augmented by only 18 units, or 9 per each added man. And by assumption, 9 units cannot be sold for enough to pay the wages of a man, as wages are but slightly less than 11 units.

Similarly, of course, if *L's* represent feed for milch cows, 28.5 units of feed rather than 25 units (combination 17 rather than 16) cannot be used profitably if the cost per unit of 3.5 units of feed is more than the value of the 18 additional units of milk that would result if the additional feed were used. This was implied in the phrasing in the opening paragraph of this section relative to the sale of output "at a satisfactory price." To be "satisfactory," the selling price of additional units of output must at least be equal to the cost of the extra expense required for their production.

The calculations in the two preceding paragraphs are clearly not least cost calculations for they ignore the cost of the *N's*. This is the proper procedure if one is seeking the most profitable (or least unprofitable) combination after having invested in the

N's. A farmer may have paid such a high price for his land that the least cost combination would normally call for very intensive cultivation, say, the 17th combination. But if the price of farm produce is very low, if 18 units of product barely cover the wages of one laborer (one *L*), then the owner will lose less by farming with but little intensity, at the 10th combination, rather than more intensively at any of the later combinations.

Similarly, if a railroad has been built, or a factory constructed, the problem then becomes one of the additional expense in relation to output. The outlays that have been made may well be forgotten, save as they may point a moral to guide later conduct. Such outlays, as will be noted later, are called fixed expenses, or overhead expenses, and the additional expenses are known as variable, or direct, or running expenses, or prime costs.

The most successful business men, of course, other things being equal, are the ones who make such fixed investments in land, factories, stores, machines, etc. that, in view of the market for the product, work can be carried on at the point of least cost.

PROBLEMS AND EXERCISES

181. (*a*) Alter the figures in Taylor's table so that combination 7 will mark the point of diminishing returns for the 20 *N's*. (*b*) Alter the figures so that combination 17 will mark the point of maximum total returns. What will then be the point of maximum average returns per *N?*

182. Suggest five pairs of economic agents not mentioned in the text that might be substituted for the *N's* and the *L's* in the table.

183. Define diminishing returns. State what the term does not mean that it might be taken to mean.

184. John and James are each building a house. A rich uncle offers to buy John a furnace and keep it in repair for him, letting John select the furnace that he wishes, and offers to supply James with coal and have it fed into the furnace for him. Will John and James select different sizes of furnaces, if each has an eye solely to his economic interest? Explain in terms of the table. Suggest a similar problem in manufacturing.

185. (*a*) Assign original cost figures to *N* and to *L* that will make the 10th combination the least cost one; the 18th. (*b*) Can you assign cost figures that will make the 7th combination the least cost one? the 21st? Explain.

186. "Diminishing returns begin when one more laborer will not increase the product as much as did the laborer that was added previously." Does this agree or fail to agree with the discussion in the text? Discuss.

187. "My unit costs have just begun to increase, therefore, I must just have entered the stage of diminishing returns." Does this agree with the text? Explain.

188. "Fortunately, I no longer have to run my farm in the stage of increasing returns. I have reached the stage of decreasing returns." Is this quotation in line with the text? Explain.

189. Describe the conditions pertaining to a cement mill that would lead to its being operated at the 7th combination.

190. Describe the conditions pertaining to a street car company that would lead to the operation of the line at approximately the 19th combination.

191. "They are all losing money yet they keep on producing." Is it reasonable to believe that men would continue to produce under such conditions? Discuss.

192. Contrast the war period with that of the last half of 1920 and the year 1921 (a period of "bad" business) in regard to the combinations used in the typical factory.

193. (*a*) After one has installed a furnace in his home, what is the problem relative to the cost of heating the house? What is the problem before the furnace is purchased? (*b*) Construct two questions similar to these in (*a*) that pertain to a factory. Answer them.

REFERENCES

A noteworthy treatment of this subject is to be found in Taylor's *Principles of Economics* from which much of the material for the above chapter was drawn. An extensive discussion of the subject, with copious illustrations is given by J. D. Black, *Introduction to Production Economics*, 1926. See also T. N. Carver, *The Distribution of Wealth*, 1902, Chapter II, and J. M. Clark, *The Economics of Overhead Cost*, 1923.

CHAPTER XVI

PRODUCTION MANAGEMENT

Importance of the Business Manager. — The importance of business managers in our economic life has been noted earlier in this book. It is they who are primarily responsible for the direction that industry shall take, the conditions under which work shall be carried on, and the quality and quantity of the product. One important problem of management was discussed in the preceding chapter. In this chapter some of the other problems of management will be considered. Attention will be given especially to the problems of manufacturing, but most of the points that will be made are also applicable to the management of other kinds of business enterprises.

Ownership and Management. — Before the advent of large scale operations in industry, ownership and management were largely identical. The owners of farms, manufacturing shops, and stores directed the work that was carried on. And despite the extent of large scale establishments to-day, the owner-manager is still a very large factor in our society. About one-third of the persons who are gainfully employed in the United States are in agriculture, and approximately two-thirds of the farm managers are owners. In manufacturing, about one-half of the establishments in this country employ only from one to five wage earners. While such firms produce only about 5 per cent of the total manufactured product, their existence testifies to the survival of the manager who is also the owner, for, perhaps almost without exception, the owner is the manager in such plants. In large scale industry the manager is usually an employee.

Perhaps in almost every case of large scale enterprise the manager is a part owner in the business, but even so, his obligation is usually to a very large degree to other owners. Further, in a large establishment there are properly speaking several managers — persons entrusted with the management of the different divisions of the work. In a large manufacturing concern, for example, there is usually in addition to the manager-in-chief, a production manager, a sales manager, a manager of finance, a manager of accounts, and a personnel manager, or some similar corps of managers. And spreading out fan-like from these persons there are various grades of subordinates that are entrusted with some of the details of management.

The Efficiency of Management. — One might expect that the incentive to economic gain would lead to a high degree of efficiency on the part of managers. But an examination shows that this is far from true even in the case of the owner-managers whose incomes are directly dependent upon the degree of efficiency in management. For the most part, rule-of-thumb methods rather than scientific methods are followed. This is due partly to ignorance and partly to a reluctance to alter habits even for the sake of economic gain.

Traditional methods of procedure based upon "guesses" or "hunches" may be very successful if the problems involved are very simple. But if many factors are involved, as is true in almost every case in the management of an industrial enterprise, one could not expect that a plan of procedure that was not based upon carefully ascertained facts pertaining to the various elements involved, would meet any reasonable test of efficiency in management.

Scientific Management. — In contrast with the traditional methods of conducting business may be set the philosophy of management that is associated with the name of Frederick W. Taylor and is commonly called *scientific management.* Taylor advocated the application of the methods of scientific analysis to all phases of business conduct, although he was particularly interested in the problems of factory management. A conspicuous feature of his work was the analysis of the various operations necessary to the manufacture of a given product. This form of analysis became known as "time and motion study," and is popularly regarded as the essence of *scientific management.* But as already indicated this term may be properly applied to the use of scientific methods of analysis in the solution of all problems in business.

Location and Size of Plant. — As was pointed out in the two preceding chapters, there are very interesting problems in connection with the determination of the location of plants, their proper size and the proper proportions of agents within them. To appraise properly the various factors that are involved, including his own ability so far as scale of operations is concerned, is one of the marks of a good manager.

The Expense of Enterprise. — The money outlay necessary to conduct a business is obviously of great importance in relation to the money income from the sale of the product. The chief forms of money outgo are wages, interest on the investment, rent for the site used, if this has not been purchased and included as part of the investment, materials, power, insurance, advertising, taxes, and, in the case of enterprises that depend upon local patronage, gifts to worthy causes.

Expenses are often roughly classified into *fixed* expenses and *variable* expenses, as noted earlier. The one group is *fixed* regardless of the capacity at which the establishment is operated, while the other *varies* with the extent of the operations. If $20,000 is borrowed at 6 per cent to build a summer hotel, there will be a fixed expense of $1200 per year from this item. This expense will not be altered regardless of the amount of business that is done, and will be as great during the winter months when the building is closed as during the summer. The wage bill for servants, on the other hand, will vary with the amount of business that the hotel does from season to season, and during the winter it will stop entirely.

Another important classification of expense is into the two divisions: *direct* and *indirect.* These have reference to the expense of producing units of product or rendering units of service. Thus the material and the machine labor used in producing a door hinge are part of the direct expense involved in its production, while a portion of the salary of the officials, and a portion of the cost of the light used by the entire plant are part of the *indirect* expense of making a particular door hinge. The term *overhead* is often used in referring to the expenses that may thus be said to be indirect.

The two classifications are not identical. All of the fixed expense of the first grouping would be listed as indirect expense, or overhead, in the second classification; but the variable expense of the first would be divided between the direct and indirect expense if the second grouping is used. The amount paid for janitor service, for example, is not a fixed charge. It ceases altogether if the plant is closed, and is thus part of the variable expense. But for any one operation, the cost of janitor service is an indirect, or overhead, expense.

Cost Accounting. — A knowledge of the costs of the various items of output is one of the primary requisites of good management. It is only upon the basis of such knowledge that a manager can determine the particular lines of production that he should follow. Ignorance as to costs is surprisingly prevalent among managers. But few farmers, for example, know the costs that they are incurring for the various products which they market in the course of a year. A particular farmer may be losing money year after year on hogs, or cattle, or oats, or on any other single item and be unaware of the fact. Likewise, small scale manufacturers and dealers usually operate their respective lines of business without having a system of cost accounting that will tell them the relative profits that they are making in their different lines of work, and thus enable them to discontinue the unprofitable, or less profitable, lines of enterprise in favor of the more profitable. But still more surprising is the fact that many large-scale firms do not have an adequate cost system.

In a study of the metal trades industry, for example, which was part of a study of waste in industry made in 1921 by the Federated American Engineering Societies under the chairmanship of Herbert Hoover, it was found that a majority of the plants studied lacked "a good cost control system."[1] In its report on the printing industry this committee quoted from a report of the United Typothetae of New York City which gave a classification of printing plants on the basis of cost systems. The two groups in which there was fairly satisfactory knowledge of costs "made money," and the others "lost money" in 1919.[1]

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[1] *Waste in Industry*, *op. cit.*, p. 220.

Cost accounting can never be highly exact, for it is only by arbitrary rules that indirect (overhead) expenses can be allocated to a particular operation. How much of the salary of the president of a firm that manufactures hardware should be included in the "cost" of making hammers, how much in the "cost" of producing saws, and how much in the "cost" of each of a dozen or a hundred other commodities? This question can no more be answered *exactly* than can the question as to what part of an ear of corn should be attributed to the seed and what part to the soil. Such problems cannot be solved. But in order to keep account of costs, overhead expenses must be allocated to the different products. It is the special function of cost accountants to devise rules that will give the best possible results in this particular.

The Reduction of Overhead per Unit of Product. — Managers, if they are wise, are always anxious to reduce the fixed or indirect expense for each unit of product, or to keep it at the lowest possible point. This can be accomplished by using the plant to its fullest capacity. Accordingly, if a plant is not being fully utilized, various price cutting devices are often used with a view to insuring a more complete utilization of it. This is profitable, as noted in the preceding chapter, so long as the price received for one unit is in excess of the direct expense incurred for its production.

The price of the product may be reduced with a view to increasing sales in the hope that the reduction in income on the units already being sold will be more than made up by the gain that will come from the more complete utilization of the plant. Or, another product, differing from the standard product of the firm perhaps only in the label that is put upon it, may be offered for sale at a price that is only a little above the direct cost involved in producing it. Then, too, if foreign countries will permit it, goods may be "dumped" abroad at a price considerably below the price that must be charged to home consumers if the manufacturers are to remain solvent.

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[1] *Ibid.*, p. 185.

The following quotation from Thomas A. Edison shows the gains that may result from such a policy:

> "I was the first manufacturer in the United States to adopt the idea of dumping surplus goods upon the foreign market. Thirty years ago . . . I was not making much money. My manufacturing plant was not running to its full capacity. I couldn't find a market for my products. . . . My experts . . . showed that we could increase the production 25 per cent at an increased cost of only 2 per cent. On this basis I sent a man to Europe who sold lamps there at a price less than the cost of production in Europe."[1]

Another device to extend the use of equipment is to offer an extra wage payment or bonus in order to encourage workingmen to increase their output per day.

The rate wars in which American railroads engaged in the seventies and eighties can be understood only in terms of fixed and variable expense. Railways had been built beyond the country's need for them and accordingly their managers found themselves confronted with large fixed expenses and with insufficient revenue to pay them. Those who saw an opportunity to increase their business thereby, began to reduce their rates in order to attract shippers away from other roads. This led to similar tactics on the part of the roads that were thus in danger of losing traffic. Finally, such rate cutting was prohibited by the United States Government.

It is, however, not always advisable to cut prices in order to stimulate buying, increase production, and decrease overhead expense per unit of product. A cut in price may mean that the former price cannot be easily restored, and, also, it may stimulate price cutting by competitors, as in the case of railroads, which has just been noted, and make it necessary for the given establishment to lower its price again. The long run rather than the short run advantages may be served by enduring for a time a high overhead cost per unit of output, rather than seeking to reduce such cost by cutting price. But unquestionably, a low overhead cost per unit of product is to be preferred, if all other things are equal, to a high overhead cost per unit of product.

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[1] *The Wall Street Journal*, December 20, 1911, quoted in L. C. Marshall *et al.*, *Materials for the Study of Elementary Economics*, 1913, p. 421.

Overinvestment in Plant. — The above analysis suggests that one important factor in good management is to construct plants of the size that will be needed in the business. To make provision in buildings or machinery much beyond the current needs of the business is necessarily wasteful. The ideal size of a plant is that which will permit it to be used fully, but not necessarily at maximum capacity, as explained in the preceding chapter. Good business, of course, calls for making some provision for unusually heavy loads at certain times. That is, it is almost inconceivable that such an adjustment can be made that equipment may be fully utilized at all times. But certainly the amount of excess equipment should be kept at a minimum. As will be developed in a later chapter, many of our industries are constantly in an overbuilt condition. Our shoe factories, for example, as noted in Chapter VIII, could make 1,750,000 shoes a day but they produce little more than half that number; and clothing factories have a capacity 45 per cent greater than their actual output.[1]

Equipment. — The kind of equipment that is provided for the use of those that are employed is also an important indication of the ability of the manager. To know just what kind to use and how much to install calls for keen judgment. Proper equipment not only assists employees in doing the work but, by enabling them to accomplish it with the minimum amount of fatigue, permits them to do more than would otherwise be possible.

The following illustration shows the importance of this aspect of management:

> "Four men, each working twelve hours a day, were required to move by shovel and wheelbarrow, 180,000 pounds of coal a day. They could not stand the work long, and gave it up. A little intelligent thinking was then applied to their equipment. They were found

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[1] *Waste in Industry, op. cit.*, pp. 17–18.

to be working with short-handled shovels of sixteen pounds capacity and wheelbarrows of 250 pounds, built so as to throw an excessive weight on the arms. In place of this equipment, they were given long-handled shovels of 21.5 pounds capacity and wheelbarrows of 400 pounds capacity, but lighter on the arms. In consequence of the change, the men found themselves able to move 65,000 pounds each in eight hours instead of 45,000 in twelve. Moreover there was no longer complaint that the work was too hard."[1]

Too many managers rely upon traditional practices in determining the character of equipment and the methods of utilization. It is only, however, on the basis of ascertained fact that the means of best facilitating a given kind of work can be determined.

Aside from tools and machinery many other features of plant equipment are of great importance. For example, a good lighting system is indispensable. It has been estimated that the annual loss in this country due to faulty systems of illumination is greater than the entire cost that is incurred in furnishing light.[2] Proper illumination is not only important in making it possible for employees to do good work, but it has also in many cases a very close connection with the health of employees.

An investigator in a New England plant a few years ago found from the personnel records that a large number of women employees were absent from work a great deal on account of headache. He noted that these employees were almost all working in one room, and upon investigation he found that the lighting system there was very bad. After making the necessary improvements, which consisted largely in a change in the position of tables and machines, a later investigation showed but very little loss of time in this department. This condition, which caused physical distress to the employees and a reduction in their earnings, and also a very considerable loss of money to the manager, was of long standing.

The proper guarding of machinery and the prescribing of safety devices is one of the functions of good management. Not only are human life and health thus conserved but the cost of operating the establishment is thereby reduced. A further aspect of good management in this connection consists in providing facilities, such as restaurants, rest rooms, and playgrounds, that will maintain a high degree of working efficiency on the part of employees.

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[1] A. S. Johnson, *Introduction to Economics*, revised ed., 1922, p. 146.

[2] *Waste in Industry*, op. cit., p. 385.

Work Control. — Another indispensable feature of good management is the proper planning of the work that is to be done. In the investigation of the boot and shoe industry by the Committee of Engineers, it was found that 35 per cent of the working time of the average shoemaker was spent in idleness.[1] This loss in working time was due to the fault of the managers in not providing for a proper flow of material and partially completed shoes through the different stages of manufacture.

The Engineers also found great waste in the men's ready-made clothing industry due to improper correlation of work and improper working methods. They quote "a recognized authority in the industry, who has been through the process of standardizing coat shop operations," to the effect that on the average 20 per cent of all of the work traditionally done is unnecessary. They further illustrate the lack of good management by saying: "In so simple an operation as creasing [the] armhole seam, six different methods were found in use among eleven operators working side by side. The best of them turned out work over two and a half times as rapidly as the poorest. The average productivity of all was 43 per cent under that of the best."[2]

In the boot and shoe industry the Engineers found that enormous waste occurs through carelessness or lack of training of the cutter. "A difference of at least $100 worth of leather per week used by two different men for the same styles and same grades of stock is not unusual."[3]

Volume of Production. — The amount of product which an establishment seeks to turn out from time to time is also an indication of the ability of the manager. Efficient management in the case of most enterprises calls for careful compilation of data relative to the state of the market in order to ascertain the volume of output that it will be possible to sell. The gains

[1] *Ibid.*, p. 133. [2] *Ibid.*, pp. 107, 108. [3] *Ibid.*, p. 155.

that may come from a reduction in unit cost when output is increased, may be more than offset by inability to sell the total product. The American Radiator Company, for example, prides itself upon making such an efficient analysis of current market conditions that it is always able to gauge its production so as to be able to dispose of the product. Many of the establishments which were investigated by the Committee of Engineers were found to be inefficiently managed in this respect: the volume of output not being adjusted to that amount which consumers stood ready to take.

Standardization of Products. — It has been pointed out repeatedly during recent years that individual firms and the public suffer a very considerable loss because of the lack of standardization of products. Three manufacturers of axes were a short time ago cataloguing the single-bit axe in 6118 varieties, and a manufacturer of men's hats was offering them in 3684 styles and colors. In 1918, one manufacturer of explosives was offering a possible line of 2,100,000 varieties and actually making 35,000.

Such "overdiversification" of varieties necessarily means a greatly increased cost to manufacturers and to distributors. Or, in more fundamental terms, it means a waste of labor and material and consequently a loss in total production for the entire society. Herbert Hoover as Secretary of Commerce has brought this matter to the attention of men in the different lines of industry and has made considerable progress in reducing the number of varieties in many lines of manufacture. As illustrative of economies to be derived from an increase in standardization it is said that Campbell's Soup decreased the number of varieties 89 per cent, and as a result decreased the cost of the sales force by 73 per cent, advertising 78 per cent, overhead 80 per cent, and increased sales volume by 600 per cent.

Labor Relations. — A very important problem for the management of any industrial establishment is that of providing such arrangements and conditions that a high degree of efficiency and loyalty may be secured from the working force. A great deal of attention has been given to this problem since the beginning of the World War, but many establishments are still very inefficiently managed from the point of view of labor relations. To quote again from the report of the Engineers:

> "With perhaps two or three exceptions, shoe shops have no departments exercising modern personnel relations with the employees. This gives the worker no unbiased means of approach to his employer, and the employer is at a loss in treating with his own employees. . . . Shoe manufacturers must develop employment or personnel departments headed by trained specialists capable of dealing impartially and tactfully with the employees." [1]

The problem of management in regard to personnel relations may be divided into at least the following parts: employment, training, wage payment, hours, promotion, shop government, and morale.

The first of these has to do with the selection of applicants for employment, and the determination of their special fitness. Needless to say good management consists in the selection of employees according to their special ability. Many firms have introduced rather elaborate tests to assist in the selection of employees and in the assignment of them to work within the plant.

After an employee has been selected, the training that he is given may be a very important factor in enabling him to be of the best possible service to his employer. The pressure brought to bear upon employers during the World War for output from factories led them to see that the methods of training that had formerly been used could be greatly improved. Particularly it was found that the time that had been used in teaching an employee a given task could be greatly shortened. Methods then introduced have come to be part of the established technique of good management. Further, after the training for a special task has been completed many well-managed firms encourage their employees to follow a course of training that is expected to further increase their ability. Among such plans a very prominent feature is the giving of courses of instruction to employees who are in executive positions or who give promise of having executive ability. In some plants part of such a scheme consists in giving special attention to the training of college graduates for executive positions.

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[1] *Ibid.*, pp. 157, 158.

A very important aspect of personnel management has to do with the method of wage payment. There are many choices in this matter, which may be classified into two: first, wages may be paid on the basis of time; or, second, they may be paid on the basis of performance. Not all lines of work, however, are adapted to the second plan, payment by piece rates. The two methods are, broadly speaking, similar. If payment is on the first basis the employer will insist that a given amount of work be done; and if a piece rate is paid, employees will not be retained unless they do a given amount of work each day.

Under the piece-rate plan there are two general schemes of payment: a flat rate may be paid or a sliding scale of rates, depending upon output, may be used. There are many variations of the latter method in use. Some of these are too complicated to give the best results, because, in order to make a sliding scale effective, it must be simple enough to be easily understood by the workers.

In the initial determination of piece rates great care must be exercised. Particularly, the rates paid on any one operation should not be set so high that it will be necessary to lower the rate in order to make the returns from the one operation comparable to those secured in other parts of the establishment. It is hardly necessary to state that a piece rate should not be cut merely because employees are "earning too much money." Unfortunately, cases of this sort have been altogether too frequent. Such a practice on the part of the manager greatly reduces the morale of the workers.

Whether employees shall have a share in the profits of the enterprise is another question that arises in connection with the problem of payment. Usually profit-sharing schemes have not proved to be advisable for the mass of industrial workers, for reasons to be noted in a later chapter. But as part of a plan for the payment of executives, profit sharing has been found to be very successful. In general, it seems to be a good principle of management so far as wage payment is concerned to follow a liberal rather than a miserly policy. This not only attracts a better class of laborers than would otherwise be secured, but improves the morale of the working force.

Another feature of good management is a definite and systematic plan for the promotion of employees. This involves not only promotion from one task to another but, also, definite provisions for wage increases as they are merited. One simple rule of good management in this connection is that all positions of importance, including those of only minor importance, should be filled by promotion from within the establishment rather than by securing someone from the outside. There are, obviously, limitations to this rule. The extent of its application depends upon the size of the plant and upon the character of the work to be performed. But certainly it is always advisable for a manager to give careful consideration to the possibility of filling a position from the ranks of his employees. To fill one important position in this way may be the means of promoting from one group to another a large number of employees. Such an event would be very tangible evidence to the workers throughout the establishment of the good will of the manager, and would thus tend toward the improvement of morale. On the other hand, if promotions are not made from within the ranks, and particularly if relatives of the management are assigned to good positions, morale is necessarily weakened.

Many employers in the past, at least, have used very poor judgment in regard to the number of hours of work that they have required from their employees. A century ago, long hours were the rule in all industries. Work was carried on from dawn to dark. The demand on the part of laborers at that time for a 10-hour working day was strenuously resisted. In 1821, in response to the demands of striking carpenters in Boston for a 10-hour day, the employers declared that such a demand was un-American and that it was due to foreign influences. The movement for the 10-hour day, however, gradually attained success during the first half of that century, and to-day in most industries the 8-hour day is the rule.

Data collected in England during the World War show that in fatiguing work, the limit of efficiency is something less than 8 hours of work per day. In some industrial operations maximum output can be secured by working many hours. But even in such cases the management would undoubtedly find it profitable over a long period of time to request only some 8 hours of work per day from the employees. In this connection it should be noted that some well-managed plants provide a vacation of two weeks each year with full pay for all employees. Further, as will be recalled from the discussion in Chapter VI, the shortening of hours — an increase in leisure — is necessary in order to utilize the increase in product that is one of the marks of a progressive society. Employers, as a group, gain from the increase in the demand for goods that tends to accompany a reduction in hours throughout an industrial society as it becomes more prosperous.

PROBLEMS AND EXERCISES

194. Why has large scale operation tended to divorce the ownership and management of industry?

195. "The desire for economic gain is an absolute guarantee of high efficiency." Discuss.

196. Why is "time and motion study" analysis of such great importance in present-day production management?

197. Assume that you are managing an automobile plant. Cite two cases each of *fixed*, *variable*, *direct*, and *indirect* expenses. Which of the fixed expenses are direct? Which of the variable expenses are indirect?

198. "We can afford to pay only twenty cents per unit for the first fifteen units produced each day, but we can afford to pay twenty-five cents per unit for additional units." A manufacturer. Why is this true?

199. What items determine the fixed expense in the operation of a given number of street cars each day? The variable expense?

200. Explain the difference between the increase in cost and the increase in output in Edison's plant, as given in the quotation from him in the text. Argue that it was to the advantage of American consumers to have Edison sell lamps abroad at a price below the price charged in America for similar lamps.

201. Draw up a hypothetical case to show that a farmer who now raises oats, wheat, corn, potatoes, and hogs would discontinue the raising of oats and hogs if he applied cost accounting to his farming operations.

202. Show that despite competition the overbuilding of an industry will tend to make the cost of the finished product higher than it otherwise would be. Show that it may, however, make the price of the product lower for a time.

203. Cite from your own observation, if possible, a case where improper equipment hindered and fatigued the workers and thus caused a decreased output per worker.

204. "I believe in letting each of my employees use his own individual method in performing his task." Evaluate.

205. Can a farmer adjust his volume of output to the amount which the consumers stand ready to take as well as can the American Radiator Co.? Explain.

206. Enumerate and briefly describe seven problems under the head of Labor Relations which the management of every industrial establishment must solve.

207. Discuss the relative merits of flat-rate and piece-rate wages. Under what conditions will profit sharing prove a satisfactory supplement to ordinary wage payments?

REFERENCES

Practical surveys of the problems confronting production managers are to be found in H. L. Gantt, *Organizing for Work;* E. E. Hunt, *Scientific Management Since Taylor;* and R. H. Lansburgh, *Industrial Management*. A scholarly treatment of overhead cost is given by J. M. Clark, in *The Economics of Overhead Cost*, 1923. Losses due to careless management are treated dramatically by Stuart Chase in *The Tragedy of Waste*, 1925. See also *Waste in Industry* from which quotations were made in this chapter.

CHAPTER XVII

RISKS IN ENTERPRISE

I. General Considerations

Business Risks. — The hazards of business are many. Fires, winds or floods may destroy one's property; thieves, sharpers, or dishonest associations may make way with it; the wages of labor, the price of material, or the rate to be paid in borrowing money may rise; the prices at which a product can be sold may fall, or the market may be completely taken away by changes in demand or by the activities of competitors. There are innumerable possibilities of business failure. No one knows the failure rate among business firms, but it is commonly estimated to be very high. Bradstreet and Co. and Dun's report business failures each year amounting to about 1 per cent of the total number of firms. But these data include only the firms that fail with loss to creditors. There are innumerable cases of failure that involve loss only to the owners in a business. Indeed, the reporting agencies referred to, in some years remove from their lists of firms in business as many as 20 per cent of the total.[1] A detailed study of the business failures in one city showed that 62 per cent of the factories, 51 per cent of the wholesalers, and 58.6 per cent of the retailers failed within thirty years. This study covered 1327 factories, 492 wholesalers, and 2550 retailers.[2] The reports which corporations make to the Bureau of Internal Revenue for purposes of taxation are interesting in this connection. In 1925, for example, which is generally considered to have been a good year for business, 177,738 corporations, or 41 per cent of the total number reporting, had deficits. These deficits amounted to almost two billion dollars.

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[1] P. D. Converse, *Marketing, Methods and Policies*, 1924, p. 378.

[2] Converse, *ibid.*, p. 376.

Knowledge and Risk. — Since risks are due to the eventualities of the future, it follows that risk becomes less as the knowledge as to what will transpire becomes more accurate. That is, as we come to understand more fully the nature of things, we are better able to make forecasts. Knowledge as to the crops that will do well in a given area, for example, reduces the risks of farming. By knowing the nature of materials, the construction and operation of machinery become less hazardous. By understanding the market trends, the risk of producing goods for future sale can be reduced. Indeed, the more complete our knowledge is the better may the risks incident to existence, and to the conduct of business, be avoided. The elements that affect business, however, are so many and so complex that it is impossible to know them so perfectly as to be able to make accurate predictions as to all future events. Thus we cannot expect to eliminate entirely the risks of business by an extension of knowledge.

Some Men Delight in Risks. — Risk-bearing is not distasteful to all men nor perhaps to any man if it be sufficiently limited. The hazard of trial that is inherent in a game is pleasurable to almost all persons, and the thrill that comes with occasional success offsets the feeling of defeat that accompanies loss. The oneness of life's activities means that the game element which is so conspicuous in the so-called social relations cannot be lacking in economic activity. The farmer often takes an avoidable chance with the elements of nature, the laborer with dangerous machinery, the banker with creditors, the employer with trade unions, and each experiences keen delight if his venture is successful.

Men differ, however, in their desire to assume risks. Particularly, the other interests of life may be such that one cannot afford to make a given venture. Family obligations, for example, may make it imperative that a given income be secured and thus a risk that would otherwise have given pleasure may be very irksome. Further, the assumption of a particular risk may carry as a penalty for failure such a degree of loss in terms of money, business failure and inability to continue a given kind of work and a given scale of living that men will not willingly undertake it.

Classification According to Risk. — As a result of these various conditions we find marked differences among men in the risks which they assume. A broad classification from this point of view distinguishes between the entrepreneur on the one hand and the capitalist, landlord, and laborer on the other. The entreprenuer lays out his money for equipment and material. He promises to pay a definite amount to the capitalist for the loan of money, to the landowner for the use of land, and to the laborer for the performance of services. If the venture is successful, the entrepreneur receives compensation in the form of profits, but, however large the profits, the other parties to the transaction normally receive only the stipulated amounts.

But within this broad classification there are many variations. Some entrepreneurs assume but little risk. The undertaking may not be hazardous; but little money may be ventured, ample safety reserves may be maintained, or the risks may be largely guarded against by contract. Other entrepreneurs may stake large sums of money on very hazardous enterprises. Also, some capitalists loan only on gilt-edged security while others take chances as to the recovery of the sums loaned. Likewise, contracts for the use of land differ in regard to the certainty of receipts of income by the owner; and laborers in the various employments face far different possibilities as to the likelihood of getting the wages that are due, or as to security of employment, or as to ability to receive promotion. The risks from case to case vary somewhat roughly as the persons concerned, on account of temperament and economic ability, wish to avoid or to assume the risks that are inherent in economic conduct.

There are many ways by which an entrepreneur may by means of contracts reduce the degree of risk which he assumes. By selling a product in advance of its manufacture, by arranging to buy materials at a given price as they are needed, by having an understanding with a banker as to the rate to be paid for borrowed funds, by making a long-time agreement with a trade union, some of the risks of business may be avoided. In addition to such contracts, insurance and "hedging" reduce certain of the risks of business. These two devices will be discussed.

II. Insurance, or The Pooling of Risks

The Insurance Principle. — Entrepreneurs and others who so desire may relieve themselves of the burden of many of the risks that are inherent in economic activities by pooling their risks. In everyday speech this is known as insurance. Let us assume that on an average one out of every two thousand houses burns down each year. If houses are valued at $10,000 each, then if each of 2000 house owners should pay $5 per year into a common fund it would be possible to reimburse the persons whose houses are destroyed by fire. Thus each person by contributing $5 to this fund every year insures himself against the danger of losing $10,000. This is the essence of insurance, regardless of the details by which it may be worked out.

An insurance company may be a purely mutual concern. The various persons who are interested may make contributions that are just sufficient to reimburse the persons who have suffered loss. Or an insurance company may be organized on the profit-making basis. That is, certain persons may undertake the business of offering protection against loss in return for a given payment known as a premium. If the amount which such a company is called upon to pay out to those who have insured is less than the amount which it receives in premiums, a profit results. There are many combinations of the mutual and business types of insurance organizations but, whatever the particular form of organization, insurance is a pooling of risks.

The insurance business depends upon the law of probabilities in relation to large numbers. The length of life of any one of 100,000 men of age 30 cannot be foretold. But on the basis of the available statistical data it can be very closely foretold how many men per 100,000 of a given age will die within one year, or two years, or how many will be alive at the end of any given period. Thus it is possible to estimate very closely the premium that a group of men would need to pay in order to provide for a given payment to the beneficiaries of each in the case of death.

It follows from this, of course, that the development of any form of insurance must normally wait upon the collection of data as to the probabilities of the occurrence of the event for which insurance is to be provided.

Self-insurance. — The dependence of insurance upon the principle of large numbers makes it possible for some business men to carry their own risks rather than take insurance with other men. Thus if a farmer owns several widely scattered buildings, he may safely conclude that the occasional loss of a building will cost him less than will the payment of yearly premiums upon all of his buildings. If he owned but one, its loss would clearly exceed the insurance premiums which he would need to pay even over a long period of time in order to protect himself against its loss. He could not wisely neglect to carry insurance if there were but one building concerned.

The Extension of the Field of Insurance. — One of the interesting features of our present economic life is the extension of the field of insurance. Life insurance is more and more the rule among men in all walks of life. Insurance against accidents, disease, unemployment, burglary, storms and other eventualities is becoming more and more common. Business concerns in an increasing degree carry insurance upon the life of the manager and thus protect themselves, to some extent at least, against the loss that they would suffer in the interruption in business policy that would result from the death of the manager. In short, the economic risks of life are more and more largely being pooled among the many persons who have to bear them, with the result that the misfortunes of life are lessened in severity.

Endowment Insurance. — In connection with the problem of insurance, reference may be made to what is known as endowment insurance. This is a form of life insurance plus a savings account. The yearly payments are in excess of the amount needed to reimburse the company for providing the life insurance. The portion that is in excess of the net life insurance premium is accumulated by the company at interest, and is payable to the insured on a specified date. Such an arrangement is perhaps very valuable to the person who would not otherwise save money. It must, however, be clear that the endowment is really not a logical part of insurance: it is a savings bank operation. Furthermore, endowment insurance, except because of tradition is no more a proper part of life insurance than it is of fire insurance. That is, it would be as logical to carry endowment insurance upon a house as upon a life. One might as well pay an extra sum to a fire insurance company in order to make savings and "get something back" as to do so in connection with life insurance.

III. Hedging

Price Changes and Risk. — One of the important sources of risk in business enterprise is in the frequent change in prices that may take place. Business men are accordingly usually anxious to contract ahead for the materials which they will need in their business operations and also to sell in advance of production the goods which they expect to have ready for the market. It is, however, not always possible for them to do this. But if certain commodities such as wheat, corn, cotton, wool and sugar, that are bought and sold on what are called organized exchanges, are used as raw materials it is possible to guard against losses that may come from a fall in these prices.

"Spot" and "Future" Transactions. — On such exchanges, or markets, men buy and sell commodities under two sorts of contracts. In one case the transaction calls for an immediate transfer of title to the commodity. This is called a "cash" or a "spot" transaction. It is comparable to the buying and selling with which we are all familiar in retail stores. The other is a "future" transaction. It is a contract that calls for the transfer of a commodity at some later date. Thus one person may contract to deliver 1000 bushels of wheat to another person at a date three months in the future at a specified price. This is similar, of course, to a bargain between a customer and a tailor calling for the completion of a suit of clothes by a given date at an agreed price. It is also similar to a contract between an employer and an employee relative to the rendering of service during a given week or month. Indeed, all contracts call for performance in the future, since the present is an infinitesimal unit of time. The difference between a "spot" transaction and a "future" transaction is thus merely one of degree.

"Short" Sales. — Sales for future delivery on the organized exchanges are for the most part made by persons who do not possess the goods which they sell at the time that they sell them. Thus a dealer on the wheat exchange may sell 10,000 bushels of wheat to be delivered two months later, and not possess a grain of wheat at the time the contract is made. Such a sale is called a "short" sale, since the seller is short of the thing that he sells. The principal reason for making such a contract is easily explained.

Assume the price of "spot" wheat to be $1.65 per bushel. Suppose that the dealer in question believes that the price of wheat is going to fall. He will then wish to sell wheat for future delivery. Suppose that he sells 10,000 bushels to be delivered two months hence at $1.67 per bushel, which covers the present price plus an additional amount for the cost of carrying wheat for two months — storage, insurance, and interest on the investment. If the price of wheat does fall to, say, $1.57 per bushel by the end of two months, this dealer will make $1000 minus the amount which he has to pay as a commission to the broker, for he will be able to buy wheat at $1.57 per bushel and deliver it to the person to whom he sold it at $1.67 per bushel.

It is clear, of course, that if, in the case assumed, the price of wheat had risen to $1.77 during these two months, the dealer whose case we have been considering would have lost $1000. The other party to the contract would have gained, instead of losing as in the case first assumed. Usually in cases such as these, there is no actual transfer of wheat. Instead of buying wheat and delivering it, as the contract stipulates, the difference between the two parties is settled by a cash payment from one to the other.

It is perhaps well to note that "short" sales are a form of future sales and are not at all uncommon in ordinary business transactions. If a manufacturer promises to deliver at a later date an article which he does not possess at the time of the contract, if a merchant takes an order for a suit of clothes which he does not have, if a laborer promises to do a piece of work the following week, each is making a "short" sale. The operation of the organized exchanges will be considered further in Chapter XXIV.

Hedging. — The operation by which a miller of flour, for example, can use a wheat market on which "future" sales take place, to relieve himself from the risk of losing money if the price of wheat should fall between the time that he purchases wheat to grind into flour and the time that he sells the flour, will now be described. Clearly, if a miller should buy 10,000 bushels of wheat for milling at $1.50 per bushel and the price of wheat should fall to $1 per bushel before he has sold the flour, he would suffer a severe loss. The price of flour would fall because of the decline in the price of wheat. But by selling "short," by hedging against this possibility of a drop in price, the miller may avoid this risk.

In the case which we have just assumed the miller would lose about $5000 on account of the fall in the price of wheat, if he had not hedged. The 10,000 bushels of wheat cost him originally $15,000. We may assume that two months elapse between the time of buying the wheat and selling the flour. It is necessary then to add "carrying charges" in order to find the total cost of the wheat. These include the expense of storage, insurance, and interest on the investment for two months. If these expenses amount to two cents per bushel, the total cost of the wheat that is in the flour when it is ready for market will be $15,200. But the value of that much wheat, under the assumptions given, will be only $10,000 at the time the flour is ready for sale, since the price of wheat is then only $1 per bushel. The flour must, accordingly, be sold on the basis of containing $10,000 worth of wheat. The miller would lose $5200 because of the decline in the price of wheat, if he failed to hedge.

Suppose now that when he bought the wheat for grinding, he sold short 10,000 bushels for delivery at the time that he expected the flour to be ready for sale. These two dates, we may assume, are January 1 and March 1. The price of March wheat in January will tend to be the same as the price of "spot" wheat in January plus the cost of carrying wheat for the two months. If the difference were more, or less, than this, buying or selling of "spot" wheat and "future" wheat would bring the two prices together. The miller would then on January 1 sell 10,000 bushels of wheat to be delivered in March at, say, $1.52 per bushel. The fall in the price of wheat to $1 in March will then make it possible for him to buy wheat at $1 for delivery at $1.52. Or without actual delivery he will be entitled to $5200 cash on his 10,000 bushel contract. He will thus gain on the "short" sale an amount equal to the sum that he will lose on the wheat that he grinds into flour.

This may be arranged in tabular form as follows:

The Transactions at the Mill		*The Transactions at the Wheat Broker's Office*	
Jan. 1		Jan. 1	
Purchased 10,000 bu. @ $1.50.	$15,000	Sold 10,000 bu. of wheat for delivery Mar. 1, @ $1.52.	
Carrying charges to Mar. 1, 2¢ per bu.	200		
Total cost of wheat to Mar. 1	$15,200	Total to be received from sale	$15,200
Mar. 1		Mar. 1	
Flour sold on basis of containing $10,000 of wheat.	$10,000	Bought wheat @ $1.00 to fill contract of sale of 10,000 bu. @ $1.52.	$10,000
Loss due to fall in price	$5,200	Profit due to fall in price	$5,200

If the price of wheat had risen subsequent to the purchase of wheat for grinding and the making of the "short" sale, and before the sale of the flour, the miller would have lost money on the "short" transaction. The amount of his loss, however, would equal the amount that he would have gained because of the advance in the price of flour that would have accompanied the rise in the price of wheat.

This illustration is somewhat unreal. In but few cases is there such nice balancing of gain and loss as is indicated here. The price of the material purchased, the price of the finished product, and the price of the material for future delivery do not normally coincide as nicely as they are here assumed to do. But the tendency is as indicated. Hedging greatly reduces the possibility of loss from a fall in price.

By hedging against a fall in price, by selling "short" at the time of buying wheat to grind, the miller limits his income to the profits that he can make as a miller; he gives up the opportunity to gain as a speculator in wheat. His profits or losses when he hedges tend to be the same as they would be if the price of wheat did not change.

Similarly, all manufacturers who use a commodity that is sold on an exchange can escape the risk of losing through a fall in the price of the article that is used, by selling "short" at the time the material is purchased. Likewise, persons who are in the business of storing grain or other produce can by selling "short" avoid the loss that would accompany a fall in price. Such selling means, of course, that the business men in question confine themselves to their specialties — they remove themselves from the class of speculators.

Removal of Risk and the Price of Products. — There can be no doubt that the avoidance of risk by any group reduces the cost of operation and thus tends to lower the price of the commodity that is produced. Fire insurance and hedging both operate to make the price of flour lower than it would otherwise be. Since millers by the use of these two methods of contracting away the risk of loss, can operate on a smaller margin of spread between the price of wheat and the price of the flour, than would otherwise be possible, competition among them forces the price of flour below what it would be if the millers could not avoid these risks.

PROBLEMS AND EXERCISES

208. Assume that you are the individual proprietor of a small toy factory. (*a*) List at least six risks that will probably confront you in the course of this business. (*b*) Which of these risks can you prevent? Which can you transfer to other people? Which must you assume yourself?

209. General Motors is a large corporation manufacturing chiefly automobiles. Cite the possible risks in this business that are run by the stockholders, the employees, and the non-bondholding creditors. How can the management reduce these risks to a minimum?

210. Suppose 1000 persons propose each to save for his family before his death, $2000. All are 25 years of age. Knowing that any one is liable to die before he has had time to save so much, they combine to insure one another that $2000 shall be ready for the family even if death comes before that sum has been regularly accumulated. Assuming that the organization is continuous, new members joining as old ones pass away, and assuming the average yearly death rate to be 18 in 1000, what annual payment would each need to make, — expenses of management, interest, etc. being ignored? (Taylor.)

211. "Insurance eliminates risks." Is this true? Do fire insurance companies prevent fire? Do they prevent fire losses to individuals? Just what is their function?

212. "No, that building just burned was not insured. I have not insured a building in seven years." A successful farmer. Why does not he insure his buildings? Why do you suppose this man stopped insuring them at the time he did rather than earlier?

213. (*a*) Mr. X last year insured his house for $5000 against fire, paying the company a $15 premium the first year. Six months later fire destroyed his home and he collected the $5000. How was the insurance company able to pay it, and how did the insurance company ascertain what it must charge per year to insure this house?

(*b*) This man was running a hatshop. Two months after his home burned he lost $1000 on hats that had gone out of style and which he had to sell for less than cost. He had been unable to secure insurance against this loss. Explain why it is easier to insure against loss by fire than loss by change of styles.

214. Suppose that 5000 owners of automobiles worth each $2000 wish to insure themselves against loss by collision. If there is an average of 100 collisions per year per 10,000 cars and an average damage of $75 per each $2000 car involved in a collision, what annual payment from each owner is necessary to insure against loss by collision, expenses of management, interest, etc. being ignored?

215. "The purchase and sale of 'futures' tends to reduce price fluctuation." Explain.

216. A miller buys 10,000 bushels of wheat at $1 in October to grind into flour, expecting to market the flour in December. The cost of carrying the wheat during this milling period is three cents per bushel.

(*a*) What risk will face the miller if he is unable to sell his flour in advance? How will the speculative wheat market enable him to escape this risk?

(*b*) We should expect the October price of December wheat to be $1.03. Why?

(*c*) If the miller sells short 10,000 bushels of wheat at $1.03 for December delivery will he gain or lose on this "future" transaction if wheat is $1.08 in December? How much?

(*d*) Will he gain or lose on his flour if the price of wheat is $1.08 in December? How much, assuming that the price of flour follows the price of wheat closely?

(*e*) Argue that speculation as illustrated here tends to lower the price of flour.

217. Develop an original illustration to show how a manufacturer of cotton yarn can use the cotton market to protect himself against the possibility of loss from a fall in the price of cotton.

218. Compare fire insurance with hedging and note the similarities and dissimilarities. What is the effect of each upon the trend of price? Why?

219. Compare the insurance of workingmen against accident, disease, and unemployment with insurance against fire. Can the premium that must be charged for each kind of insurance be ascertained with the same ease in each of the four cases cited?

REFERENCES

For a general treatment of risk in business and the means of meeting it see C. O. Hardy's *Risk and Riskbearing*, 1923.

The problems of insurance are well treated by S. S. Huebner in *Life Insurance*, 1923; *Property Insurance*, 1922; and *Marine Insurance*, 1922. The effects of hedging and speculation are carefully analyzed by W. H. Hubbard, *Cotton and the Cotton Market*, 1923; and E. G. Nourse, *The Chicago Produce Exchange*, 1918. Most of the books listed in the appendix contain brief treatments of the subject.

PART IV

PRICE

CHAPTER XVIII

PRICE: INTRODUCTION

The Importance of Price in Economics. — The subject of price is the dominant problem in economics. This is true because economics is concerned with the relations that arise among men as they seek to serve their economic interests. These relations grow out of the conditions of exchange: they come from the fact that men specialize at various tasks and mutually exchange their products. If there were no specialization, if each person were economically independent of all other persons, there would be no science of economics as we know it to-day. The problems of economic conduct under such conditions would be problems in engineering, using this term broadly, such as how to build houses, weave cloth, fertilize land, etc. Since the science of economics thus centers in the exchange relations that prevail among men, it follows that the prices at which these exchanges take place constitute the major field of study in economics. Indeed, almost all problems in economics are either predominantly or indirectly problems in price.

The word *price* in this connection must be interpreted broadly. Not only the prices of commodities but the wages of labor, the rates of interest, the rent of land, the charges of public utility companies, the tariff duties upon the importation of goods into a country, taxes and license fees of all kinds are properly included within the meaning of the term. This chapter and the following few chapters will, however, be restricted almost entirely to a discussion of the prices of commodities. The other price subjects will be considered later.

Prices and Valuations. — The problem of value is the most universal problem of life. In all phases of human activity, the making of choices is constantly necessary, and choice can be made only as a result of an evaluation of the alternatives that are presented. What friends shall be sought? What forms of conduct observed? What line of study followed? These and countless other similar questions are ever present. The fact that one's choices are largely determined by tradition does not make the matter of valuation any less a part of life. This merely means that customary valuations are accepted.

The field of economic activity is especially marked by the necessity of making choices. Shall one work or play? Shall this article or some other be produced? Shall this good be sold, and at what price? Shall this one be bought, and what price should be paid? These questions are illustrative of the many similar questions that must be answered, and that thus involve the comparison of alternatives and the making of choices in one's economic conduct. To stress this point further, the very important question for any economic society; namely, what lines of production shall be followed, depends upon an evaluation of the various goods or services that might be produced. It is only as a result of judgments as to what should be produced that any one line of production can be undertaken. In a socialistic society, such judgments are made by the government officials or by the citizens as voters. In our society, the evaluations that determine the lines of production that are followed are made very largely by the various individuals who have money to spend. To some extent we use the socialistic method, as when we provide educational opportunities, build roads, maintain armies, or otherwise direct economic activity through the channels of government. But whatever method is followed, choices, judgments, evaluations must precede the performance of economic activity.

The Measure of Economic Value. — The values of economic goods, as are all values, are measurable only in relation to each other. One object is more or less valuable than another or equal in value to it. The situation is comparable to the matter of length. All measures of length are relative. One thing is longer or shorter than or equal to another. To facilitate thought in regard to length, a standard of length has been adopted, and a series of measurements constructed by which distances are indicated. Thus a certain doorway is three times as high as a certain table, but instead of expressing the matter this way we state the height of the doorway in terms of a yard, which is our standard of linear measure, or in some one of the units derived from the yard. Similarly, weight, bulk or speed can be expressed only in relative terms and here, too, standards have been devised as means of measurement. Likewise, the value of one good or service can be given quantitative expression only in terms of some other good or service. And as in the case of the measurement of length, weight, bulk or speed a standard has been chosen for the measurement of economic values. In our country this is called a dollar. All economic values may accordingly be stated in terms of dollars, just as lengths may be stated in terms of yards, or weight in pounds, or the bulk of liquids in gallons.

Value Is Subjective. — While the economic values of objects are similar to the lengths, or weights, or bulk of such objects in being measurable only in terms of each other, the economic values differ from the other qualities in being subjective. One object is longer or heavier than another with no reference to the mind of man, but to say that one article is more valuable than another implies a human judgment. This means that certain ends or goals have been set up and that the one article is believed to be superior to the other in the realization of some one particular end or goal. The one thing is "better for" the given purpose than is the other.

Economic values thus come into being only through evaluations which are necessarily subjective. Hence, as human judgments are altered, economic values are correspondingly altered. A given kind of hat may have a high value one season and be worthless another; one kind of food may be of no value in one community and have a high value in another; or, to give another illustration, a religious revival may remove some articles entirely from the category of economic goods by attaching to them the idea of evil. Economic values, to repeat, are purely subjective. No good or service can have value save as it is wanted by someone. Thus to say that a good has value means that it is significant for some purpose. The prices with which we are so familiar are hence merely monetary expressions of human judgments as to the relative ability of particular goods or services to serve human purposes.

Prices Are Relative. — From what has been said above, it follows that all prices are mutually related to each other. As one object is valued more or less than another, its price is higher or lower than the price of the other. The price of no one good or service can, then, speaking broadly, be set without reference to the prices of other goods and services. As the position of each marble in a round-bottomed bowl is dependent upon the position of every other marble, to borrow an illustration from Professor Alfred Marshall, a distinguished English economist, so each price is dependent upon every other price. Prices are not adjusted to each other as delicately as this analogy implies them to be. A change in the price of matches would not lead to an alteration in the price of a Packard automobile, but the prices of wood and of steel are related to each other. Hence, the price of a box of matches and the price of a Packard are mutually related. The exhaustion of wood, for example, would cause the price of matches to rise, and by leading to a greater substitution of steel for wood the price of steel would be affected. This might then lead to a change in the price of Packards. Thus an alteration in any one price *tends* to cause other prices to change.

To take another example, suppose that the price of paper should fall, and that all other prices and conditions should for the time being remain unchanged. Some of the habitual purchasers of paper would continue to purchase the same amounts of paper as before, and thus they would spend less money for paper and hence have more money with which to purchase other things. This would tend to raise the prices of these other things. But at the same time that this was happening some of the other habitual purchasers of paper might be expected so to increase their purchases of paper that the total amount of money that they pay for paper would be increased. Further, other persons who had not been purchasers of paper could be expected to be attracted to its use as a result of the drop in price. The increased use of paper by these groups would necessarily mean that they would have less money available for the purchase of other commodities than would otherwise be the case. This would tend to lower the prices of the goods which these persons had been accustomed to purchase, but which they must now go without.

The changes in the prices of other goods as a result of a fall in the price of paper would be especially marked in the case of the commodities for which paper could be substituted in large quantities. A considerable increase in the use of paper in making containers for packages, in decorating rooms, or as an element in the construction of the walls of buildings, would appreciably affect the prices of the commodities that were displaced. Furthermore, any change in the price of any commodity as a result of the change in the price of paper would in turn tend to affect the prices of other goods, and so on, *ad infinitum.*

While there can be no question as to the reality and significance of the price-making forces that thus tend to keep all prices nicely adjusted to each other, it must be noted that there are other price-making forces that tend to prevent the making of extremely nice price adjustments. First, there is inertia. Both buyers and sellers tend, within somewhat narrow limits, however, to continue to pay or to ask the prices to which they have become accustomed. Further, as buyers choose what goods to purchase or what sellers to patronize, they frequently do not make exact calculations, and, similarly, sellers often fail to calculate correctly the various price possibilities that confront them. But despite these price-making forces that tend to retard the operation of the price-making forces discussed in the preceding paragraphs, a change in the price of any commodity, if it is sufficiently large, cannot fail to have an appreciable effect upon the prices of other commodities. Broadly speaking, all prices are mutually related to each other, and, due to the ever-changing conditions of our modern life, they are always in the process of being mutually adjusted to each other.

The analyses of the various price-making forces which appear in the following chapters will enable the reader to appreciate more fully the fact of mutual relationship among the countless prices that prevail in the economic system. One chapter, "The Interdependence of Prices," will be devoted entirely to a discussion of these interrelationships.

Prices and Scarcity. — All economic value rests upon scarcity. If the goods that men wish to use were not scarce, there would be no need to exercise economy in getting or using them, and thus there would not be any economic goods. It is only because goods are scarce relatively to the desire of men for them that they are prized. Air is vital to life, but under normal conditions it is so abundant, in relation to our desire for it, that there is no need to economize in using it. It is thus a free good. In frontier communities, land is usually a free good, but as the population increases it tends to become scarce relatively to the desire of men for it, and as a result it becomes an economic good, and may in a short period of time command a very high price.

As has just been implied, the word *scarcity* as used here has meaning only in relation to desire. There may be so many units of a good that it is said to be very abundant, but the desire for it may be such that it is scarce. Thus although there are billions of bushels of wheat produced every year, wheat is always scarce. On the other hand, there may be but a very few units of an article, but if men do not desire it the article would not be scarce. It is the scarcity of goods relatively to the desire of men for them that gives them value. And it is the scarcity of one good as compared with others that gives it a high or a low value in terms of the others. The scarcity principle is fundamental to the pricing process.

It follows from this that value comparisons must be made in terms of individual units of the goods that are being considered. An ordinary diamond, for example, is worth 1000 loaves of bread, but this does not mean that diamonds are more important in the life of men than is bread. This value relation prevails because bread is so plentiful that one loaf is not of great importance, while diamonds are so limited in quantity that one diamond is of considerable significance. If diamonds were as plentiful as grains of sand, the value relation between a loaf of bread and a diamond would be reversed.

Similarly, factory laborers receive small returns for their work as compared with vaudeville entertainers. But this does not mean that the one group as a group is less valuable than is the other. It only means that in view of the large numbers in the one group as compared with those in the other, one individual factory laborer is less important than is one vaudeville entertainer. The prices (wages) that indicate the relative importance of single individuals in these two groups do not throw any light at all upon the broader question as to the relative value of factory labor as compared with vaudeville entertainment. Valuations — prices — it must be remembered, run in terms of individual units, not in terms of all of the units of a good taken together.

Many persons find fault with the valuations that are thus made. They talk of the general importance of farming, for example, and of school teaching as compared with prize fighting, and insist that the returns in the two fields should exceed the returns in the other. But clearly there is no rational basis for comparing the values of goods or the services of persons save in terms of individual units. It would be the height of irrationality to pay for air under normal conditions. It is essential to life; no element is more important; yet any one unit of it is valueless. Likewise, it would be very irrational to prize a loaf of bread, under normal conditions, above a rare jewel. Under no conditions of life — under no scheme of economic organization — would it be rational to prize commodities or personal services except in reference to their relative scarcity.

It is legitimate, of course, to find fault with the judgment standards by which values are ascribed, if one is bold enough to believe that one's judgment is a better criterion for conduct than is that of others. This would mean, however, that the desires of men were being questioned, not the method of setting values (prices) on the basis of given desires. Thus perhaps men should not wish to see prize fighting, for example. But with judgments as they are in respect to the importance of the various goods and services, the prevailing prices follow as a matter of course. And these, to repeat, indicate the relative scarcity (in relation to the desires of men) of the individual units of the various goods and services that are bought and sold.

Marginal Buyers. — The analysis which has just been given in terms of individual units may be stated in terms of marginal units. To say that bushels of wheat, for example, are valued as individual units, is to say that each bushel is valued in terms of the bushel of wheat that is marginal to the purchasers of wheat. If there is a short crop of wheat, for example, the price might be $3 per bushel. This would mean that the price need be no lower than this in order that the owners of wheat might sell all that they possess; it would mean that the individual units that were the least prized would be worth $3 to the persons buying them. Some of the buyers of wheat would be willing to pay as high as, say, $10 per bushel for a limited quantity, but, since in order to dispose of the entire crop, some bushels must be sold at $3, no buyer need pay more than this. The bushels that are purchased by the marginal buyers — the bushels that would not be bought at more than $3 per bushel — determine the price of all of the other bushels. It is assumed, be it noted, that all of the bushels of wheat are exactly the same. The marginal bushel is as good as any other bushel. Marginality merely means that if the price should rise above a given price, $3 in this case, one or more bushels would not be purchased that would be taken at $3.

To continue this illustration, if there is such a large crop of wheat that all of it cannot be sold unless the price is 95 cents per bushel, the price would tend to be set at this figure. The bushels of wheat that could not be sold at any point above 95 cents would determine the price that would be paid for all. Or, to state the matter differently, the buyers who would not pay over 95 cents per bushel would set the price limit beyond which other purchasers need not go in buying wheat. With the sellers competing against each other for buyers, and with wheat uniform in quality, one bushel cannot normally be sold at a price above that received for other bushels. Every bushel will tend to bear the price that must be set in order to sell all of the bushels.

Similarly, each one of a group of laborers of a given grade of skill cannot normally get a wage above, or, at most, much above, that at which all of the members of the group can get employment. The marginal employer determines the wage that all of the employers pay, and this represents the marginal worth of laborers to the marginal employer. The marginal laborer in any group, the one that will not work at a given task unless the prevailing wage rate is continued, is also very significant in determining the wage of the group. The wage cannot fall below the point at which such laborers would leave the given group, if the employers are to have the services of all of the persons now in the group. This point will be more fully developed in the following chapter. The principal idea to be represented here concerns only the buying side of a market. It is; namely, that if we assume that all units of a given commodity are to be sold, or all members of a labor group employed, the price set will correspond to the amount that marginal buyers are willing to pay for a portion of such goods or services.

This method of pricing means, of course, that all buyers other than marginal buyers, in the case of any good or service, are able to buy at a price below that which they would pay if it were necessary. In the above illustration, all buyers of wheat pay only 95 cents per bushel, but many of these might have been willing to pay two or three times this amount for wheat rather than go without it. Such buyers are said to enjoy a consumers' surplus. The amount of consumers' surplus which the rich enjoy in purchasing the necessaries of life is evidently very considerable, since we may assume that they would pay all that they possess for the goods necessary to sustain life. The idea is certainly not startling that the rich have a consumers' surplus in the purchase of food, for example. This is merely another expression of the fact that the rich are rich — that they have more money than have the poor. But consumers' surplus is not for the rich alone. Most persons make some of their purchases at a price below that which they would pay if it were necessary. All comforts and luxuries may be thought of as surplus that persons have over necessaries, since the one group of goods would be sacrificed for the other.

Marginal Sellers. — The counterpart of the marginal buyer is the marginal seller. A marginal seller is one who would refuse to sell at less than the going price. A farmer who is about to sell his corn at 75 cents per bushel, but who will hold it rather than sell it for less than 75 cents per bushel, is a marginal seller. He is on or at the margin of not selling. Later, of course, he may be very anxious to sell and may be willing to take any price that a buyer will offer. He would then not be a marginal seller, but for the time being, in the case assumed, he is marginal.

The terms *marginal seller* and *marginal producer* are closely related. In many cases the two terms are synonymous. If one is producing a certain commodity and selling it at a given price, and if he would cease producing it if its price should fall, he is both a marginal seller and a marginal producer. For short periods of time such a person might refuse to sell if the price dropped, but continue to produce and store his produce, or he might, having a quantity of goods on hand, cease to produce and continue to sell; but over a long period of time he would be marginal both as a seller and as a producer, if at all. A retail dealer, who is at the margin of the retail business, is a marginal seller of the kind of goods that he handles and at the same time a marginal producer of retailers' services.

As was noted early in the book, a marginal producer is not necessarily an inefficient producer. An efficient farmer, for example, may be a marginal producer of any one crop that he raises, and an efficient manufacturer of a half dozen articles may be a marginal producer of any one of them. The test of marginality is withdrawal from the market whether one is a producer, seller, or buyer. Efficient producers are perhaps able to shift from one line of production to another more readily than can the inefficient ones. Hence, those that are highly efficient may be nearest to the margin of not producing a particular commodity. However, in the case of production that involves highly specialized equipment, such as is required for the generation of electricity, marginality and inefficiency tend to go hand in hand. Such a plant cannot be diverted to some other use. It will be withdrawn from this use only when it fails to earn expenses. Also, in regard to a kind of business taken as a whole, such as farming, manufacturing, or retail selling, the marginal producers tend to be the inefficient ones.

The marginal seller has the same relation to price on the selling side of the market as the marginal buyer has on the buying side of the market. If a given quantity of a certain commodity, or service, is to be purchased (or sold) no seller need take less than the marginal seller will take. If the disposition of sellers is such that buyers must pay at least $1.15 per unit, for example, in order to get 1000 units of a certain commodity — if 1000 units will not be offered for sale if the price is less than $1.15, due to the reluctance of certain sellers (or producers) to sell for less — then those persons who would take less than $1.15 need not do so. All of the sellers can get the same price that the marginal sellers insist on having. This extra amount, which the supra-marginal sellers can get, in addition to what they would take, is a surplus to them. It is, on the sellers' side of the market, similar to the consumers' surplus on the buying side of the market.

Supply and Demand. — The analysis of the part played by marginal buyers and marginal sellers in setting the price of all of the units of a given supply is only one aspect of the pricing process, albeit it is the one that is of major importance. All of the conditions on the sellers' side and also all of those on the buyers' side need to be carefully analyzed in order to explain the establishment of a given price. This is commonly phrased as the problem of supply and demand. The following chapters will be devoted to a study of each of these two groups of price-making forces.

Price and Cost. — The most patent fact of price in our everyday life is that there tends to be a close correspondence between price and cost in the case of almost all goods. This relationship is established by forces that operate on the selling, or supply, side of the market. An ordinary lead pencil, for example, commands a price of 5 cents. If for any reason the price should rise above this figure, the quantity that is being produced and offered for sale would greatly increase, and the price would have to be lowered in order to dispose of this large quantity. On the other hand, if the price should fall to less than 5 cents, certain producers would stop making pencils, the quantity for sale would fall off, and sellers would be able to raise the price to 5 cents and dispose of the quantity that was being produced. In short, since the amount that is normally demanded at 5 cents can be produced at a cost of 5 cents, price cannot be either appreciably above or below this figure. This elementary principle is so vital in the pricing process that this brief presentation is introduced at this place in order that the student may the more clearly appreciate its importance. It will be more fully developed in a later chapter.

Prices That Are Not Related in Costs. — There are a few prices, however, that are not related to the cost of furnishing the goods in question. Certain monopoly prices do not closely correspond to the cost of producing the monopolized article or service, although as will be shown in the chapter dealing with monopoly price, this relationship is perhaps closer than is usually thought to be the case. The most important price that is not related to cost, is the price of land. Speaking broadly, no cost is involved in making land available for use. It is a free gift of nature. Consequently its price cannot correspond to the cost of producing it. The price at which one person will sell a given parcel of land may, however, be determined by the cost of the land to him. This will be more fully discussed later.

Why Cost Prices Are as They Are. — To say that the prices of almost all goods correspond to the costs of furnishing them to the buyers, raises the interesting question as to why the cost prices are as they are. Clearly costs are prices. Thus to explain prices by costs is to explain prices in terms of prices. This point will also be discussed later. It is sufficient to observe now that there is nothing illogical in such an explanation. If all prices are mutually dependent, as emphasized early in this chapter, then no one price can be explained except in terms of other prices. The analysis although circular does not run in a "vicious circle."

PROBLEMS AND EXERCISES

220. (*a*) H. J. Davenport characterizes the problem of price as "the central problem and the organizing interest of current political economy as a science." — *Economics of Enterprise*, p. 28. Briefly defend this statement. (*b*) Illustrate the dependence of individual welfare upon the price relations by noting the effect of possible changes in certain prices upon farmers, unskilled laborers, professional men, and employers.

221. Distinguish value, economic value, exchange value, and price.

222. Assume that in the year 2000 a series of remarkable inventions had made all economic goods so plentiful that they would no longer command a price. Would they have economic value? Value?

223. What effects would a 50 per cent reduction in the price of Chevrolets tend to have upon the price of Wilton rugs?

224. Do you suppose that any purchasers of the College Annual are "on the margin"? Explain.

225. Describe, from your own experience if possible, (1) a sale of labor service at the margin; (2) the purchase of some commodity at the margin.

226. Describe a case, real or imaginary, in which a change in one price causes a change in another price.

227. An independent retail grocer sells his business and assumes a managership with the Kroger Grocery Co. Suggest in terms of the margin two explanations of this grocer's action.

228. Is an automobile used solely for pleasure consumer's surplus to the owner? Explain.

229. How do you account for the fact that writing desks of a given size and material in general sell for approximately the same price and that there is such a great disparity in the prices of the art works of the masters?

CHAPTER XIX

THE GENERAL NATURE OF SUPPLY AND DEMAND

The Price of a Suit of Clothes. — In this chapter we shall consider the general nature of supply and demand forces as they operate to establish the price of a typical commodity. Both of these groups of forces will be analyzed in greater detail in the following chapters. Consider the price of a suit of clothes. The price of a suit of a given grade, which we shall call D, is, let us say, $45, and 10,000 suits are sold each month. The sellers, we may assume, are clever business men and have been watching for an opportunity to raise the price, and the buyers are alert to get the kind of suit that will give them "the most for their money." The price has been at this point for two years. Why is the price at this figure? Why isn't it more or less than this? Why haven't the sellers been able to raise the price? Why haven't they had to lower it?

The answer to these questions involves an analysis (1) of the supply side of the market and (2) of the demand side. Considering first the supply situation, and assuming that 10,000 suits are being made and offered for sale each month at $45 each, the question arises as to what would happen so far as the supply is concerned if the price should rise.

A rise in price would normally lead to an increase in the supply of suits. We may assume that a rise in the price to $50 per suit might lead to the production of 2000 additional suits each month, and that a price of $55 per suit might call forth the production of 6000 more suits per month, or 18,000 in all, granted that the prices of other grades of suits and of other things that are being produced remain the same. That is, *the supply forces* — the potential supply forces — are such that an increased output of this kind of clothing would tend to follow an increase in its price, if all other prices remained the same.

To complete this general picture of the forces of supply, attention should be directed to the effect which a price below $45 per suit would have upon the output of the grade of suit in question. Clearly, if all other prices remained as before, a drop in the price of this kind of suit to $40, would lead to a sharp falling off in the output of suits. Manufacturers would turn to the production of other kinds of clothing, or would dismiss some of their employees and curtail their output, or would go out of the business of manufacturing clothing. And the more marked the fall in price, the more marked would be the reduction in output. Some persons might for one reason or another continue to manufacture suits even at a price of, say, $35, or even $30 per suit, but this could not be expected to be more than a very small portion of the normal output of 10,000 suits per month when the price is $45 per suit. The output, we may assume, would be 7000 suits per month if the price should fall to $40, 4000 at $35, and 500 at $30.

A Supply Schedule. — The data which have been given above relative to the probable effect of a change in the price of the suits under consideration upon the monthly output of such suits may be combined in what is called a supply schedule.

SCHEDULE 1

Supply Schedule of Suits
of D Grade per Month

Supply	*Price*
18,000	$55.00
12,000	50.00
10,000	45.00
7,000	40.00
4,000	35.00
500	30.00

This schedule means, as already indicated, that if price were $30 per suit, 500 suits would be produced each month; at $35, 3500 more, or 4000 per month; at $40, 7000 per month; and so on. The assumption is that the records show that 10,000 suits are being produced and that the price is $45 per suit. The other data are derived on the basis of estimates. Such data are, then, hypothetical. But although they are hypothetical rather than actual, they are clearly accurate as indicating a tendency, which no one would question, for an increase in price to call out a larger volume of production and for a reduction in price to lead to a curtailment of output, all other things remaining the same.

A Supply Curve. — The data which are given in a supply schedule may be presented graphically by plotting them into a curve. The usual method followed is to construct a right angle with the angle at the lower left side, and then measure price along the perpendicular line and units of supply along the horizontal line, as in diagram 1 below. The curve may be constructed differently by measuring price along the horizontal line and units of supply along the perpendicular, but the usual method is to use the perpendicular line to show price and the horizontal line to show the units of supply.

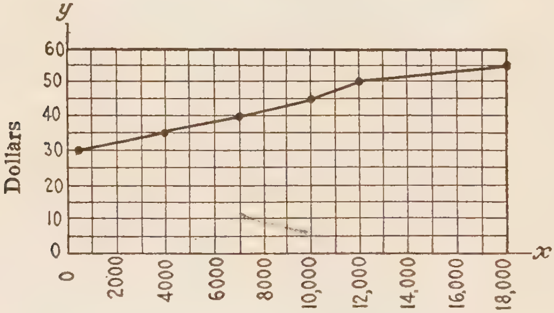

Fig. 1. — Supply Curve for Suits of D Grade per Month.

To plot the data given in the above schedule, lay off the perpendicular, as in diagram 1, to measure price beginning with O price, and, similarly, lay off the horizontal line to measure supply. When this is done, locate the point that is opposite the point which indicates $30 and also opposite the point which indicates 500 units of supply. This mark on the diagram indicates that 500 suits of clothes will be produced for sale if the price is $30 per suit. Then establish the point which will show that 4000 suits will be forthcoming if the price is $35 per suit, and so on until the six points are established which represent all of the data given on the schedule.

This schedule does not give any data by which these points may be connected into a curve. The data may be interpreted to mean that 500 suits would be produced at $30, and that this number would not be increased until the price rose to $35; that then the output would be 4000 suits per month, but that no more than this amount would be produced at a price of $36 or $38, the monthly output not increasing until price rose to $40; and so on for the remainder of the schedule. Or the data may be taken to mean that the price changes are by dollar rather than by five dollar steps, and that the output per month changes with each variation of the price.

This second interpretation is the one that is usually made from such price data as are given. This is indicated by connecting the six given points on the diagram with straight lines. It must, however, be kept in mind that data are given, in this case, for only six points on the diagram. Any point upon the line connecting two of these six points indicates a price and supply trend, not actual price and supply data.

The Demand for Suits. — To come back to the primary question under consideration, why, with this supply curve, is the price of these suits $45 rather than some other figure? Clearly, this question cannot be answered on the basis of this curve alone. It indicates no reason why the price should be at one point rather than at another. It is only by comparing the demand with the supply that an answer can be found to our question.

What do we know about the demand for this grade of suits? The data given are that 10,000 suits are being sold each month at $45 per suit. What would happen if the price of these suits should be raised to $50, and if all other prices should remain as before? The number of such suits that could be sold would certainly be greatly reduced. Many persons who would otherwise have purchased such suits will buy suits of a different grade, and some persons will postpone the purchase of a suit and meanwhile buy something else with the money which they had thus saved. This falling off in the purchases of such suits will necessarily be more and more marked if the price should be advanced successively from one figure to another. The limitation of buying power, in addition to the ability of persons to substitute other kinds of clothing, makes it impossible to continue to sell the same number of such suits as the price is advanced from one figure to another.

But not all of the customary sales would fail to be made if the price were raised from $45 to $50. For one reason or another, to repeat a phrase used in discussing the supply side of the market, some of the customary purchasers would not fail to buy if the price were raised. With 10,000 suits being sold each month, perhaps 8000 would be sold if the price rose to $50, and 3000 per month if the price were advanced to $55. But, assuming, of course, that all other prices remain the same, perhaps no suits of this grade could be sold at $60 per suit.

On the other hand, if the price of these suits should be reduced, and all other prices remained as before, the number of suits that could be sold each month would be considerably increased. Some persons would buy this grade of suit rather than the one which they would otherwise buy, and some persons would buy more suits than they would otherwise purchase. Perhaps if the price fell to $40 per suit, the number of such suits that could be sold each month would increase from 10,000 to 13,000; and at $35 perhaps 20,000 such suits could be sold each month. At any lower figure, the number that would be taken would, of course, be still more greatly augmented. Perhaps as many as 50,000 could be sold each month at a price of $30, if all other prices remained as they were before this change was made.

A Demand Schedule. — These data may be arranged in a schedule as were the supply data.

SCHEDULE 2

Demand Schedule for
Suits of D Grade
per Month

Price	*Demand*
$55.00	3,000
50.00	8,000
45.00	10,000
40.00	13,000
35.00	20,000
30.00	50,000

This schedule may be combined with the supply schedule to make one joint supply and demand schedule. This schedule would be as follows:

SCHEDULE 3

Supply and Demand Schedule
for Suits of D Grade
per Month

Supply	*Price*	*Demand*
18,000	$55.00	3,000
12,000	50.00	8,000
10,000	45.00	10,000
7,000	40.00	13,000
4,000	35.00	20,000
500	30.00	50,000

A Demand Curve. — The data given in the demand schedule may be plotted into a curve as were the data in the supply schedule. The curve of these data is given in diagram 2.

A Supply and Demand Curve. — The supply curve and the demand curve for these suits may be combined into one diagram by superimposing one upon the other. The combined curves are shown in diagram 3.

Supply and Demand Equilibrium. — We can now take up again the primary question before us; namely, why is it that the price of suits of D grade is $45 rather than, say, $50 or $40? The answer depends upon the conditions of both supply and demand. As noted earlier, the supply conditions alone do not furnish a basis for an answer. Nor is a knowledge of demand alone sufficient to furnish an answer to the question. But when both the supply and the demand conditions are viewed together, as in the combined schedule, or the combined curves, the reason for the establishment of the price at the one figure rather than at some other becomes clear.

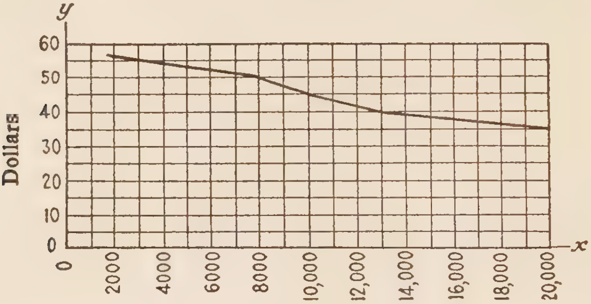

Fig. 2. Demand Curve for Suits of D Grade per Month.[1]

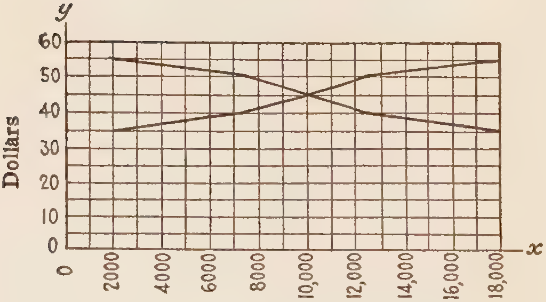

Fig. 3. Supply and Demand Curve for Suits of D Grade per Month.

We shall first analyze the problem in terms of the combined supply and demand schedule. If the price were to be set at $50, not only would the number of suits of this grade that are offered for sale increase from 10,000 per month to 12,000 per month, but the number that would be purchased would also change. This change would be from 10,000 per month to 8000 per month. Thus at $50 per suit, 4000 suits, or one-third of the total output, would remain unsold each month. The industry could not endure such a condition. Price cutting would be instituted. This would tend to go on until price fell to $45 per suit.

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[1] Space does not permit extension to include data at 30 dollars per suit.

It would be possible under certain conditions, for producers such as these to form a combination and restrict output, and thus maintain a price above that which would be set if there is open competition among them. For the present, we are assuming that this is not done; that, instead, active price competition prevails. Active price competition may not be the rule in many lines of modern industry, but even so, the principle of competition as the controlling factor in price is not removed. This will be discussed later, in the chapter on monopoly price. For the present it may be noted that if, in order to raise the price to approximately $50, the manufacturers of this grade of clothing should combine and keep the output at 7000 suits per month, that is, alter the competitive supply schedule, they could not similarly keep down the output at a still higher price. Not only would some producers tend to break away from such a combination and seek to make money by enlarging their output, but other clothing manufacturers would begin to make this grade of suit and persons in other lines of work would be attracted to the clothing business.

It is thus only within somewhat narrow limits that monopolization can restrict output. Hence, the assumption of competition is true to the general condition that prevails, even if there is a great deal of monopolization.

It may be noted parenthetically that, regardless of the conditions on the supply side so far as competition is concerned, there is competition on the demand side. As already indicated in the description above, this is shown in the demand schedule. It is the competition of suits of other grades and of other goods, with the suits of D grade, that leads to a falling off in the number of D suits that are purchased as the price is raised from $45 to $50.

Price, then, to take up again our primary question, cannot be above $45 per suit under the conditions of supply and demand as shown in this combined schedule. Similarly, price cannot be below $45 so long as conditions prevail as indicated in the schedule. If for some reason the price should be reduced to $40, buyers would wish to purchase 13,000 of these suits per month, but there would be only 7000 suits available each month. Dealers would thus sell their month's supply long before the end of the month and would begin asking manufacturers for additional quantities. To secure more suits, the dealers would bid up the price in competition with each other, and this would call out an additional supply. This movement would tend to go on until the price had been brought back to $45. The price would not rise beyond this figure for the reasons already given. The conclusion is then that under the conditions assumed in this combined schedule, price must be $45 per suit.

The fact that under the assumed conditions price must be $45 per suit is also evident by examining the supply and demand curves in diagram 3. The point at which the two curves intersect marks the price that must prevail. If the price were set at any other point, forces would be at once set in motion that would bring the price back to $45. The analysis on the basis of the curves is identical with that given in considering the combined schedule, for the curves are merely diagrams of the schedule. The student should prove for himself by using the curves, that the price in this case could not be other than $45.

It was noted above that these supply and demand data are assumed to be estimates, with the exception of the data of output and purchases at the prevailing price which are assumed to have been taken from the records of manufacturers and dealers.

The point to be made now is that the precise amounts that would be offered for sale at other than the going price, and the amounts that would be purchased at other than this price, need not be known in order to make the above analysis. If the amount that would be offered would increase somewhat if the price were raised, and fall off somewhat if it should be reduced, and if the amount that would be purchased would fall off at a higher price and increase at a lower price, the conclusion is the same as when definite supply and demand data are assumed, as in the illustration. In other words, the validity of the above analysis does not depend upon the data as assumed. It depends only upon the assumption, to speak in terms of curves, that the supply curve slopes upward to the right and that the demand curve slopes downward to the right. The degree of the slope is not vital to the conclusion.

The conditions which have been assumed are clearly typical of those that prevail in the case of most goods or services. That is, the supply curve for most things slopes upward to the right. This is to say that an increase in the price of a good or service, all other things being equal, will lead to an increase in the amount offered for sale, in the case of most, if not all, goods or services. The amount offered for sale may not increase with every rise in price but as price continues to advance it is practically inevitable that the amount which is for sale will be increased. And, the demand curve slopes downward. In order to sell larger and larger quantities of any good or service the price must be reduced. Conversely, a rise in price tends to reduce the amount that can be sold, all other things being equal. The supply and the demand forces thus move in opposite directions. Price tends to be set at the point at which they come into equilibrium.

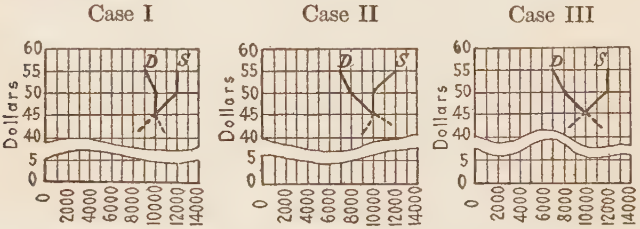
It must not be assumed, however, that price changes and the resulting changes in the amount that buyers would take and that sellers would sell are proportional to each other. There is, indeed, no proportionate relation between price changes and resulting changes in quantities offered for sale, or in the quantities demanded. For example, a 10 per cent increase in the price of certain goods would not increase appreciably the amount offered for sale, while in the case of other goods it would result in a very marked increase; and similarly, such a price increase in the case of certain goods would not alter the amount that buyers would take, while in the case of other goods it would greatly reduce the quantity that would be purchased. The effect of price changes on the volume of goods demanded will be discussed further in the following chapter under the topic "The Elasticity of Demand," and the effect of price changes on the volume of goods offered for sale will be considered in the chapters dealing with supply.

The Four Limits to a Price.[1] — (1) *The Two Upper Limits.* — In the illustration of the price of a suit of clothes, it was pointed out that there were two conditions that marked the upper price limit for such suits, one being the addition to supply and the other the subtraction from demand, that would occur as price rose. In the schedule, both of these conditions are shown to be operative at a price of $50, thus preventing the price from being this high, or from remaining at this figure if it should be advanced to this point. But either one of these two conditions would be alone sufficient to check the upward movement of a price. This is shown in the three following cases.

SCHEDULE 4

Case I			*Case II*			*Case III*		
Supply per Month	*Price*	*Demand per Month*	*Supply per Month*	*Price*	*Demand per Month*	*Supply per Month*	*Price*	*Demand per Month*
12,000	$55.00	9,000	12,000	$55.00	7,000	12,000	$55.00	7,000
12,000	50.00	10,000	10,000	50.00	8,000	12,000	50.00	8,000
10,000	45.00	10,000	10,000	45.00	10,000	10,000	45.00	10,000

These three cases may be expressed with supply and demand curves as follows:



Case I Case II Case III

FIG. 4.

Under the conditions shown by these three schedules, or three diagrams, price could not be $50. In case I, price is prevented from being $50 by the addition to supply that would be made at this figure. The 2000 additional units that would be offered for sale at this price would lead to a failure to sell 2000 units, since only 10,000 would be purchased. The inability of some dealers to sell all of their supply would lead to price reductions, and to the eventual elimination of the 2000 additional units per month from the market.

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[1] This discussion was suggested by F. M. Taylor's analysis in chapter 20 of his *Principles of Economics.*

In case II, price could not be set at $50 and remain there, because under the conditions shown to prevail only 8000 units would be purchased while 10,000 are offered for sale. This would leave 2000 units unsold and would lead to price cutting by the dealers, and to the reëstablishment of price at some point below $50.

Either one of these conditions is thus alone sufficient to mark the upward price limit in the case of any commodity or service. The one condition (case I) may be described as the addition to the actual supply of the potential supply that had been on the margin of becoming actual; and the other condition (case II), as the loss from the market of that portion of the demand that had been on the margin of dropping out. The one of these conditions that is effective in the case of any price is the one that is first brought into play as price rises. In the case of certain goods, the potential supply keeps the price from being above the price that does prevail, and in the case of other goods, the marginal buyers are the effective cause in preventing the price from being higher than it is.

In the case of some goods, the two conditions which have been described operate together at the same point to mark the upper limit of a price. The schedule in case III shows such a condition. Price in this case could not be $50 because both the potential supply that would be effective at this price, and the marginal demand that would drop out at this price, prevent such a price from being established.

The price of every commodity or service is illustrative of one of these three cases. The price of soft coal illustrates the first one. Any rise in price at the mines tends to call new mines into operation and to lead to an enlarged output from many mines that are being operated. It is this, rather than a reduction in the volume of purchase that prevents the price of soft coal from being higher than it is. The price of Ford automobiles illustrates the second case. A rise in price would not cause the supply of this or other similar makes of cars to be increased appreciably, but it would curtail purchases by causing persons, who would otherwise have bought Fords, to buy other machines, or to go without purchasing cars. Further, in the case of automobile prices generally, it is the decline in sales that would follow an increase in price, rather than a possible augmentation in supply that accounts for prices being no higher than they are. The price of a suit of clothes of any given grade is perhaps illustrative of the third case. It is no higher than it is because a higher price would both augment the supply and reduce the demand.

(2) *The Lower Limits.* — The two conditions that mark the possible lower limit to any price are very similar to the two that have just been described. They are illustrated in the following schedules:

SCHEDULE 5

Case A			*Case B*			*Case C*		
Supply per Month	*Price*	*Demand per Month*	*Supply per Month*	*Price*	*Demand per Month*	*Supply per Month*	*Price*	*Demand per Month*
10,000	$45.00	10,000	10,000	$45.00	10,000	10,000	$45.00	10,000
7,000	40.00	10,000	10,000	40.00	13,000	7,000	40.00	13,000
5,000	35.00	12,000	8,000	35.00	15,000	5,000	35.00	15,000

These three cases may be expressed with the following supply and demand curves:

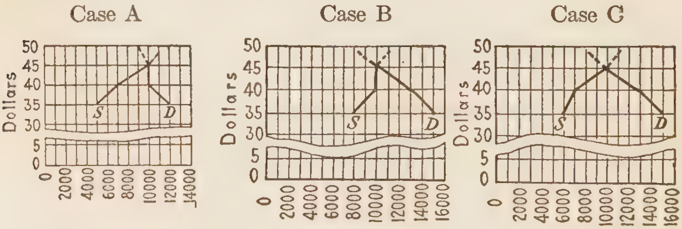
Case A
Case B
Case C

FIG. 5.

Each of these schedules, or diagrams, indicates conditions that would prevent price from being $40. In case A, price could not be $40 because at that price only 7000 units would be offered for sale and 10,000 would be wanted. The supply in the hands of dealers would be exhausted so readily at a price of $40 that it would be apparent to them that the price could be raised, and it would be advanced accordingly to some figure above $40.

Under conditions as shown in case B, price could not be $40, but for a reason other than that which applies to case A. In case B, if the price should fall to $40, 3000 additional units would be wanted by buyers each month. This would lead to such an exhaustion of dealers' stocks that they would see that it was possible to charge a higher price. The price would then be advanced to some point above $40.

Either one of these two conditions may, then, mark the lower limit to the price of a commodity. One of these (case A) may be called the loss of the marginal supply and the other (case B) the addition of the potential demand that was on the margin of becoming actual. The one of these that sets the lower limit to price, in any particular case, is the one that is the first to be encountered as price falls. In the case of certain commodities and services, the lower limit is found in the loss of the marginal sellers; and in the case of other commodities and services, the fact that additional purchases would be made if the price fell is the reason that the price cannot be lower than it is. In still other cases, both of these conditions operate together to maintain price at a given figure (case C).

The price of table salt is illustrative of the lower limit to price being set by the loss of marginal sellers (case A). If the price of this commodity should be reduced, additional buying would not be encouraged, but some sellers (producers) would leave the business. It is this that keeps the price up. The price of potatoes in the early spring illustrates the effect of marginal buyers (case B). Here the sellers are anxious to dispose of their supplies before the next crop comes on the market. They will sell at almost any price. The buyers are then the effective force in marking the lower limit. Their competition — the addition of buyers as price falls — keeps the price from falling below the price that prevails. However, over a long period of time, marginal producers of potatoes are perhaps the more effective force in maintaining the price of this commodity. And similar to the conclusion in regard to the upper limits, the price of a suit of clothes of a given grade is perhaps prevented from being lower than it is by the operation of both of the limiting conditions (case C). That is, any reduction in price would perhaps result both in such a loss in supply and such an increase in demand that price would be forced up again.

It may be further noted that either one of the conditions that mark the upper price limit may be paired with either one or both of the conditions that mark the lower price limit. Of course, the four may operate together, or two may mark one limit and one the other. There are, indeed, nine possible combinations of these four price limiting factors. In terms of the cases designated above, case I may be combined with case A, or case B, or case C; case II with A, B, or C; and case III with A, B, or C. These various situations may be illustrated with supply and demand curves by plotting the schedule of these six cases in the nine possible combinations. This may be done by taking in turn each of the diagrams given above for cases I, II, and III and combining with it in turn the diagrams for cases A, B, and C.

The Bargaining Range. — The above analysis suggests that the supply and demand forces come into equilibrium at some one point, $45 in the above case, and that no other price could be maintained. The price-making forces are not, however, always so balanced that only one possible price could be maintained. In other words, it is possible that there may be a range of prices, any one of which might be set in view of the supply and demand conditions. Thus, in the case of a suit of clothes of a given grade, it is possible that any one of several prices in close proximity to, say, $45 might be maintained. Thus supply and demand forces might permit the price of a given suit of clothes to be $42.50, $45 or $47.50, but not $40 nor $50. Such different possible prices in the case of any commodity are within what may be called the bargaining range. Within this range of possible prices, the sellers and buyers bargain with each other for a price advantage. As one or the other group is the more shrewd or the less timorous, the price set will favor it by being at or near the price limit that is to its advantage.

The extent of the bargaining range varies considerably among goods and services. It tends to be wider in the case of goods sold at retail than in the case of goods sold at wholesale. It tends to be especially wide in the case of houses and narrow in the case of raw material used in manufacturing. Wages of labor usually have a wide bargaining range and the price of wheat a very narrow one.

The bargaining range depends, of course, upon the promptitude with which one, or both, of the upper limiting conditions and one, or both, of the lower ones are brought into play. The analysis in the following chapters will help to an understanding of the conditions under which these limiting factors operate, and will thus indicate whether the bargaining range in the case of given prices is wide or narrow. This will afford a basis for a conclusion as to the abilities of groups of sellers (monopolies) to control prices in given cases, and it will also throw light upon the problem of public commissions in regulating the prices (rates) of public utilities.

Given Conditions of Supply and Demand. — It must be carefully noted that all of the above analysis applies to the question as to why the price of a given commodity is as it is. It is all based on the assumption that there are given conditions of supply and demand and that these are for the time being unchanging. Under such given conditions, it has been shown that the price of a commodity or service must be set at a certain point, or at one of a few closely related points. In other words, the process by which prices are set under given conditions of demand and supply has been indicated. The interesting question as to why one price may change in relation to other prices has not been considered. In the following chapters, among other things, attention will be given to the conditions that will change the dispositions of buyers and sellers and thus alter demand and supply schedules.

PROBLEMS AND EXERCISES

230. (*a*) Construct a supply and demand schedule and plot same. (*b*) What price would be set? (*c*) How many units of supply are on the margin according to the schedule? How many units of demand?

231. Assuming a state of free competition among buyers and sellers, explain just why the price in problem 230 is set where it is. What rôle is played by the marginal sellers? The marginal buyers?

232. Would the bargaining range tend to be wide or narrow in the case of the following goods? Why? Autographs of Anatole France, oats, men's suits of a given grade, garage service, gasoline, breakfast cereals.

233. Two conditions are really necessary to the existence of a price for any commodity or service: (1) the demand at some price above zero must be as great as any supply which will be forthcoming at that price and (2) the demand at zero price must be *greater* than any supply which will be forthcoming at that price. Defend that statement with respect to both conditions. (Taylor.)

234. Suppose that the supply schedule for potatoes at a given date is as represented by the following table:

Price	*Supply* (*bushels*)
$1.00	1,000,000
1.05	1,500,000
1.08	1,700,000
1.10	2,000,000
1.12	2,200,000
1.14	2,500,000
1.16	3,000,000
1.20	3,250,000
1.25	3,500,000

(*a*) What would be the potential supply at the next higher price if actual price were $1.08? $1.12? $1.14?

(*b*) What would be the marginal supply if price were $1.05? $1.08? $1.10? $1.20?

(*c*) Define marginal supply and marginal potential supply.

235. Suppose that the demand schedule for potatoes is as follows:

Demand (bushels)	*Price*
3,250,000	$1.00
3,000,000	1.05
2,800,000	1.08
2,700,000	1.10
2,500,000	1.12
2,400,000	1.14
2,000,000	1.20
1,900,000	1.25

(*a*) What would be the potential demand at the next lower price if the actual price were set at $1.08? $1.10? $1.12? $1.14?

(*b*) What would be the marginal demand if actual price were $1.08? $1.10? $1.12? $1.14?

(*c*) Define potential marginal demand and marginal demand.

236. "There are indeed nine possible combinations of these price-limiting factors." (Text.) Illustrate each by means of nine short supply and demand schedules.

237. Cite two products other than those mentioned in the text to illustrate each of the four price limits and defend your illustrations.

238. The price of a fountain pen of a given size and make is $5. Indicate briefly what relation is borne to this price by the four limits to the bargaining range.

239. Discuss the limitation of the bargaining range in respect to anthracite coal. See p. 328.

240. "Supply and demand are set by price. A change in price will change both supply and demand. Therefore circular reasoning is involved in the statement: Price is set by supply and demand." Discuss.

CHAPTER XX

DEMAND

Demand Defined. — *Demand*, as was indicated in the preceding chapter, is used in economics to mean the ability and the willingness to pay for a given economic good. Desire is thus not alone sufficient to constitute demand. There must be, in addition to desire, ability and willingness to pay.

The term *demand* as thus defined is used in several slightly different senses. The two meanings that differ most sharply from each other are actual market demand and potential market demand. That is, *demand* is used to mean the actual number of units of a given good that are being purchased during a given period of time, and, also, to mean the number of units that would be purchased at some other price, if such price were established. That is, the word is used to mean both the actual demand at a given price and the potential demand at several assumed prices. In this second sense the word *demand* means a demand schedule.

It is in using *demand* to mean either market demand or an entire demand schedule, which, of course, includes market demand, that the principal differences in the use of the word are found. This may be illustrated by the expression: The demand for cotton has decreased. This statement would perhaps never be used except to mean that the amount of cotton that is being purchased has decreased. The difference in meaning would come in the implication as to why such a change had taken place. There are two possibilities. First, the quantities on the demand schedule might have been reduced: the demand curve might have shifted to the left. In other words, the price offers of buyers might have become less. Such a change might come about either because of a decrease in the desire to use cotton or because of a decrease in the ability to buy it.

The second possibility is that the demand curve had remained unchanged, but that a decrease in supply had led to a new price equilibrium at a higher figure, and to a reduction in the amount sold. The price change in this case would not have been caused by any change in demand. The decrease in market demand would have been brought about by a change in supply. Similarly, the statement: The demand for coal has increased, may mean either that the demand schedule for coal has altered (that the demand curve has shifted to the right), or that the supply schedule has so altered (the supply curve moving to the left) that a new price equilibrium has been established with the former demand schedule. Hence, if a reference is made to a change in market demand it is well to state why the amount purchased has been altered, if the reason for the change is significant.

Desire and Social Approval. — Very obviously, the desires for goods and services that become effective in offers to buy arise largely from a desire to have social approval. Or, to use the terminology employed in Chapter V, the demands for goods are very largely institutional, and cannot be fully understood except in terms of the prevailing institutions. Only a few, if any, of our consumption goods are purchased without reference to the opinion of others. And even in the demand for industrial equipment there is often the element of regard for the opinion of other persons.

The quest for social approval takes many forms. Certain persons strive for unusual things in clothing, houses, furnishings, automobiles, etc. These are the so-called social leaders. Other persons then seek to emulate these adventurous ones and demand similar articles. In the field of women's dress this is fittingly characterized by two terms, *smart* and *popular*. The new item in dress that is being accepted is said to be *smart*. After it has been widely adopted it is said to be *popular*, but it is no longer smart. Those who would be smartly dressed must then find something else which will meet with approval, and this will in time cease to be smart and become popular. While the field of women's dress is most conspicuous in this particular, there are somewhat similar waves of demand in almost all branches of expenditure. But even apart from changing styles, demand is largely *social.* Styles merely make this aspect of our economic life more apparent than it would otherwise be.

Ability to Buy. — The ability to buy, which is necessary to economic demand, should be emphasized. It is only as persons have the means with which to buy, or the necessary credit, that their desires for commodities and services can become effective demand. Prosperity is thus vital to an extensive demand. If, for example, farm crops are bad, or laborers are unemployed, or employed at very low wages, the demand that would otherwise be made for certain goods will not be forthcoming.

The Slope of the Demand Curve. — In the preceding chapter, the analysis of price was based upon the assumption that as price rose fewer units would be purchased and that as price fell the number of units that could be sold would increase. This is a universal law, or principle, of demand. This may be expressed in terms of curves, drawn as indicated in the preceding chapter, by saying that the demand curve slopes downward to the right. There are some possible exceptions to this principle within narrow limits, as will be noted presently, but this does not mean that the general principle is not valid.

(1) *The Limitation of Buying Power.* — The principle of demand that has just been noted rests primarily upon the fact that buying power is limited. This being true, the number of units of any good that can be purchased by any person or group, is necessarily limited, and as the price of any good rises, fewer units of it can be purchased, and as its price falls a larger number of units can be bought. It is thus inevitable that a demand curve will slope downward to the right, although, as suggested above, and as shown in the preceding chapter in the schedules that illustrate the limits of the bargaining range, price changes do not in every case lead to an alteration in the volume of purchases.

The effect of limited buying power on demand is greatly enhanced by the inequality in buying power, or income, that prevails in a modern economic society. The graduations in income throughout a population bring it about that as the price of a given commodity is reduced it becomes possible for persons to buy who were excluded at a higher price, and, *vice versa*, as the price of a good rises, persons in the various income groups grading upward from the lowest must successively give up their purchase of it to some extent, if not entirely.

(2) *The Desire for Variety.* — The limitation on buying power which has just been noted is alone sufficient to account for the downward slope of the demand curve. But in addition to this there is another element in the situation. This may be called the law of variety. A desire for variety is one of the most fundamental aspects of our being. We soon tire of one sight, or one sound, or one author, or one line of activity. Hence successive units of any one good will normally be purchased only at a successively lower price. That is, the larger the quantity one is asked to buy, the less the price per unit that will be paid. This, of course, has but very slight application to many purchases because of the fact that only one unit is desired. The demand curve for cook stoves, for example, slopes downward to the right, but not because a family will buy a second and a third stove only at a lower price than would be paid for one. Save in exceptional cases only one cook stove would be purchased at any price. But in the case of food, articles of clothing, and other similar goods the satisfaction derived from a few units lessens the desire to buy more units except at a lower price and thus contributes to the downward slopes of the demand curve.

This principle of demand, it should be noted, applies to the total market demand, not to the demand of individuals or of small groups of individuals. One person, for example, desiring to paper a room for which ten rolls of paper are required, would not pay a higher price per roll for seven rolls of one pattern than for ten. He wouldn't buy seven at any price. Hence the curve of *his* demand for wall paper does not slope downward roll by roll. But there can be no doubt that more wall paper can be sold in any city at a low price than at a high price. Further, in the case of articles of luxury, an increase in price might lead to an increase in the volume of purchases by the richer groups, but this would tend to be more than offset by the falling off of purchases by the less well-to-do groups. Hence the demand curve for the good would slope downward. However, one cannot safely assert that there are no exceptions to this rule, or to almost any other one. But, clearly, the principle of demand under discussion is of *general* validity.

The Elasticity of Demand. — Although all demand curves slope downward they do not all have an equal slope. Some are very steep relatively to others, or to turn it about, some curves are very flat relatively to other curves. A demand curve, by definition, indicates the number of units that would be bought at different prices. If the number of units that would be purchased at a given price is much larger (or smaller) than the number that would be bought at a slightly higher (or lower) price, the demand is said to be elastic. There is a big "stretch" in demand in such a case from one price to another. This condition would be shown by a curve that is relatively flat. On the other hand, if almost as many units would be bought at a given price as at a slightly higher price, the demand is not very elastic. The curve in such a case would be relatively steep.

Since the demand for all goods varies with the price — since all demand curves slope downward to the right — there is no good for which the demand is not elastic. There is none for which the demand is inelastic. But just as one article is said to be soft and another is said to be hard, although their difference in this respect is only as to the degree of hardness, so if the demand for one good is but little elastic as compared with the demand for most goods, it is said to be inelastic, while if the demand for a good is very elastic as compared with the demand for other goods, it is said to be elastic. The two following demand curves illustrate, respectively, elasticity of demand and inelasticity of demand. In the one case, a change in price from O b to O a (or from O a to O b) would result in a change in the amount that would be purchased from O M to O R (or from O R to O M) while in the other case a similar change in price would alter the amount that would be purchased only by O N minus O M, or M N.

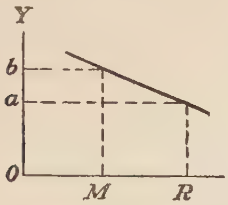

FIG. 6. Demand Curve for Good A.

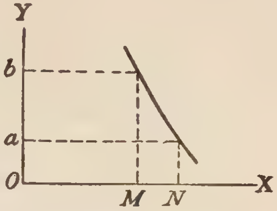

FIG. 7. Demand Curve for Good B.

There is not only marked variation among goods in respect to the elasticity of the demand for them, but also the demand for a good may differ greatly in elasticity within different price ranges, as is indicated in the illustrations of elasticity of demand that are to be given presently. Indeed, a demand curve that is not equally steep (or flat) within all possible prices shows a difference in elasticity at different price ranges. Thus the following curves of demand for goods C and D show marked differences in the elasticity of demand at prices above the price O a as compared with the elasticity of demand at prices below the price O a. In the case of C, the demand is inelastic above price O a and in the case of D it is elastic, while below price O a the demand for C is elastic and that for D is inelastic.

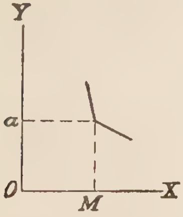

FIG. 8. Demand Curve for Good C.

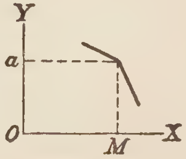

FIG. 9. Demand Curve for Good D.

Unitary Elasticity. — Some writers define as unitary elasticity that degree of elasticity which will make the money receipts of sellers the same at different prices. In the case illustrated in the diagram below, O M units can be sold for price O b, but in order to sell O Z units, price cannot be higher than O a. Since O b is drawn to be equal to two times O a, and O M to be one-half of O Z, O M multiplied by O b is equal to O Z multiplied by O a, or the two rectangles O M e b and O Z h a are equal to each other. The elasticity of this demand is thus said to be unitary within the price range O a to O b. Any greater degree of elasticity according to this terminology, would be described as greater than unity and any less degree as less than unity. Or according to some writers, the one would be said to be elastic and the other inelastic.

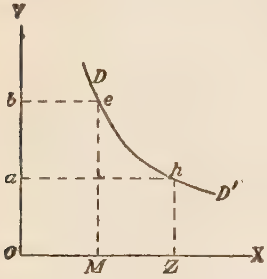

FIG. 10.

To phrase this differently, if the total value of the units that can be sold at a given price is equal to the total value of the units that could be sold at a different price, the relationship of these two totals will be as 1 : 1; that is, the elasticity will be unitary.

Referring to the diagram again, if a line be drawn either from *e* to the right above D D′, or from *h* to the left below D D′, it will indicate a greater degree of elasticity than is indicated by D D′. The elasticity in the new curve would be more than unitary, since D D′ represents unitary elasticity. Similarly, a line either from *e* below D D′, or from *h* above D D′, will represent less elasticity than does D D′, or less than unitary elasticity.

It is evident from this that whenever the demand below the customary price has less than unitary elasticity, in the case of a farm crop, for example, farmers lose money if the crop is large, assuming that there is no change in their costs. In terms of the diagram above, if the elasticity were less than it is there shown to be, if O Z supply could not be sold except for a price less than O a, sellers as a group would receive more money if they produced only O M rather than O Z units. Such a situation often occurs in agriculture. Reference will be made presently to cotton and potatoes as illustrative of this point. But while a very high degree of elasticity in the demand for a crop, at less than the customary price, is advantageous to the farmers concerned if the crop is larger than usual, it is to their advantage that the demand at prices above the customary price should be inelastic, if the crop should be less than normal. It is only thus that a short crop could be sold at a very high price. In brief, it is to the interest of any group of producers that the demand curve for the particular commodity should bend sharply at the customary price — being flat or elastic below such price and steep or inelastic above it.

Conditions Determining Elasticity of Demand. — (1) *Substitution.* — One condition that determines the elasticity of the demand for a good is the degree of ease with which a substitute may be procured for it. The demand for one kind of prepared breakfast food, for example, is very elastic, assuming the prices of other kinds of breakfast foods to remain as they are. That is, if the prices of all kinds of breakfast food, other than the XY brand, should be regarded as fixed, then an increase in the price of the XY brand to a point above the normal price would result in a marked decrease in the amount of the XY brand that could be sold; and under such assumed conditions, a reduction in the price of this one brand would lead to a marked increase in the quantity of it that purchasers would buy. In contrast to the demand for such an article, the demand for table salt is highly inelastic, as nothing can be substituted for it. This, however, does not permit the producers of salt to get an inordinate price for it. The competition of producers — the slope of the supply curve — keeps the price down to a cost basis, despite the inelasticity of the demand.

This analysis may be phrased in terms of competition. That is, when one article may be substituted for another the two compete with each other for the consumer's dollar. This makes the demand for each elastic. This is something of a factor even in the case of goods that are widely different. Thus the elasticity in the demand for opera tickets comes in part because of the desire to spend money for other things, such as food, clothing, books, or golf sticks, rather than spend what seems to be a large sum on the opera.

One element in the matter of substitution is habit. In so far as the custom of using a particular good, or a particular brand, becomes fixed, the demand for it is thereby made less elastic than it would otherwise be at prices above the usual price. The persistent advertising campaigns of certain firms is directed to implanting in the minds of purchasers the idea that other similar articles should not be substituted for the one in question. In so far as this attempt succeeds, the demand for the article becomes relatively inelastic and the price could be raised without as great a loss in patronage as would otherwise take place. Furthermore, such a buying habit on the part of a large number of persons tends to make the demand for the good in question elastic at less than the usual price. That is, if the price were lowered the buying habits of the customary purchasers might be imitated, and sales greatly increased.

The above statement in regard to substituting one kind of good for an altogether different kind of good if the price of the one that is being purchased should rise, may be phrased in terms of the importance of a particular good to the buyers thereof. The degree of elasticity of demand for any good tends to vary inversely with the importance of the good to the persons who are buying it. Thus the demand for a novelty tends to be very elastic, for, by definition, buyers have not yet come to be dependent upon it. The demand for a good which is a luxury is thus much more elastic than is the demand for an article which is a necessity. The definitions of the two words mean, of course, that the use of the one good would be given up rather than the other. It is important, however, in this connection to remember that one good may by itself not be a necessity of life while the group to which it belongs may be so classified. Thus food is a necessity, but any one kind of food is not. Hence the demand for one kind of food may be very elastic. This is especially true of certain items that are either considered to be of but little importance, or are very similar to other food items that may be substituted for them. Thus the demand for turnips or parsnips is very elastic, while the demand for wheat bread is very inelastic. The demand for any one kind of brand of wheat bread is, however, very elastic.

(2) *The Height of a Price.* — The discussion of the elasticity of demand thus far has been concerned, broadly speaking, with

the effect of the ease or difficulty of substituting one good for another. Another very important factor in conditioning the elasticity of demand will now be considered. This is the height of the price. In general the demand for articles of low price tends to be less elastic than that for articles of high price. The whole problem of elasticity of demand, and indeed of demand in general, as already noted, is related to the limitation of purchasing power. If an article costs so little that the amount spent for it during a week, or a month, does not appreciably affect the budget of the individual, then, obviously, an increase in its price might lead to but very little curtailment in the amount of it that is purchased. On the other hand, if the expenditure for the good in question bulks large in an individual's expenditure, the demand for it necessarily takes on more elasticity because an increase in its price means that the purchase of this or of some other article must be given up. And, likewise, a fall in the price of a good of low price would not normally greatly increase the amount of it that would be purchased, because the low price already would have permitted very extensive utilization by all persons.

(*a*) *The Case of Water.* — The rates charged for water, for example, in most American cities are very low. In Columbus, Ohio, the rate is $1.20 per 1000 cubic feet. This means that 62 gallons (248 quarts) cost one cent. A decrease in this price would presumably not increase the amount of water that is used, nor would an increase, even to twice the present rate, lead to a curtailment in the use of water. But if the rate were twenty times the present rate, or one cent for 3 gallons (12 quarts) there would be considerable elasticity in the demand for water. This would be still more marked if the rate were one cent per quart. That is, if the rate charged for water were very high, the demand for water would be elastic, whereas, with the present low rate there is but little elasticity in the demand for water.

This situation is illustrated by diagram 11. At the low price of O a, O M units of water are purchased, while at a price of O k, O H units would be taken. A slight increase or decrease in the price, O k, would very appreciably alter the amount of water that would be purchased, but a slight change in the price, O a, would not appreciably affect the amount purchased. At the high price, the demand is very elastic; at the low price it is very inelastic.

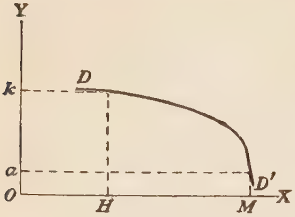

FIG. 11.

(*b*) *The Case of Cotton.* — The effect of the abnormally large crop of cotton in the season of 1926 on the price of cotton is also illustrative of this point. During the autumn of that year the price of cotton fell from approximately 18 cents a pound to 12 cents a pound, a reduction of one-third. The explanation of this situation is suggested in the analysis above of the demand for water. The price of cotton had been so low, approximately 20 cents a pound, that cotton had been used so extensively that a slight reduction below the customary price did not lead to a marked increase in the amount that was purchased. In order that the large crop might be marketed, the price had to be reduced to a very low figure, as indicated. The reduction of the price by one-third meant that the receipts of cotton farmers were less than normal as a result of the bountiful harvest, for the crop was not one-third larger than usual.

If the price of cotton were, normally, 40 cents a pound, an unusually large crop would be advantageous to the growers. If that price were the customary price, cotton would be so little used, assuming, of course, that all other prices are as they are now, that only a slight decrease in price would greatly augment the quantity that could be sold. In other words, a considerable increase in supply beyond the normal output could be sold at a price only slightly lower than the customary price, if the customary price were high.

(3) *Effect of the Customary Price.* — The habit of using a particular good, as noted above, makes it more possible than would otherwise be the case for sellers to raise the price of such a good without reducing the volume of sales. But at the same time, the habit of paying a certain price for a particular good tends to make the demand for it elastic above the usual price,

since customers may regard an increase in a long-established price as being so unreasonable that they will refuse to purchase the good at a higher price. This is especially true if substitutes are available at the former price. But aside from the possibility of substituting another commodity, an increase in the customary price will normally reveal a marked degree of elasticity. It is because of this fact that retail dealers will often discontinue a brand of goods rather than buy it for resale at an increase above the price that has prevailed for a considerable time.

(4) *The Effect of Perishability.* — Perishability is also an element in elasticity. If a good is perishable, the demand for it tends to be inelastic at less than the customary price, over short periods of time. Since such a good cannot be stored, purchasers will not normally buy more than they are accustomed to buying even if the price falls to a very low point. Potatoes furnish a good illustration of this. If the potato crop is abnormally large, the price usually falls to a very low figure. Potatoes cannot be kept from one season to another, and as the food habits of the people cannot be altered quickly, a crop of potatoes in excess of normal usually means that the price falls to a very low point. It has, indeed, long been observed that a large crop of potatoes usually yields less money to farmers than does a small crop.

The following data for the five years immediately preceding the war are interesting in this connection.

TABLE 10

THE POTATO CROP AND THE VALUE THEREOF, 1909–1913[1]

	Production 1000 bushels	*Farm Value 1000 dollars*
1909	394,553	213,679
1910	349,032	194,566
1911	292,737	233,778
1912	420,647	212,550
1913	331,525	227,903

[1] *Agriculture Year Book*, 1925, p. 913.

It will be observed that for the four years beginning with 1910 the total crop and the value thereof varied inversely in amount year by year. The explanation of this is, obviously, similar to that given above in reference to the price of cotton, with the addition of the element of perishability.

Differences in the Elasticity of Demand at Different Prices. — The point has been made above that the demand for a good may be more elastic within certain price ranges than within other price ranges. This deserves additional emphasis. As indicated in a preceding paragraph, the demand for many goods is highly elastic above the customary price, as in the upper portion of the curve in diagram 12. The slope of the demand curve below the customary price differs much more among the various goods than does the slope of the curve above the customary price. Whether a reduction in price below the customary figure will greatly alter the possible sales is much more problematical than is the result if the price should be increased. But certainly with many goods the situation is as indicated in the lower portion of the demand curve, DD′, in diagram 12 — the demand is very inelastic at less than the customary price.

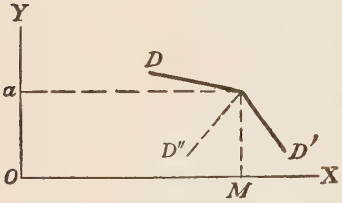

Fig. 12.

The demand for anthracite coal, for example, appears to correspond with the curve, DD′. An attempt to raise the price by an appreciable amount would lead to the substitution of other fuels, especially bituminous coal, for anthracite. And any moderate reduction in the price below that which is customary would perhaps not appreciably increase the sales of this kind of coal. Under these conditions of demand, sellers tend to lose if they attempt to raise the price, or if they lower the price. In the latter case they would not gain as a result of increased sales.

It is interesting to note that the demand curve for an article sold by an individual merchant, or manufacturer, may be similar to that indicated in diagram 12, even although the demand for the article considered broadly may describe a very different curve. If one dealer, or manufacturer, raises the price of an article above that which is customary, while other dealers do not do so, buyers tend to forsake the one merchant. The demand curve is very elastic at prices above the customary price. But if one dealer reduces the price of an article this also may lead to a reduction in his sales. That is, the amount that can be sold may not merely fail to increase appreciably as price falls; it may actually decrease. The line of the curve may bend back as D″ in the diagram. This tends to be especially true of goods whose quality cannot easily be ascertained by buyers. Price comes to be the criterion of the quality of such goods and a reduction in price is usually taken to mean that the goods offered for sale are of inferior quality. Hence the demand in such a case falls off below the customary price.

The above discussion does not warrant the statement that is often made in this connection; namely, that buyers prefer to pay high prices rather than low prices. All other things being equal buyers prefer to buy at the cheapest possible price, but although a laboratory analyst may prove that goods are equal, if buyers do not believe them to be equal, they are not equal so far as the price making forces are concerned.

All Other Things Not Always the Same. — The analysis at the opening part of this chapter to the effect that the number of units that will be purchased tends to vary inversely, though not proportionally with the price, has been based on the assumption that all things other than the price of the one good under consideration remain unchanged. This is not always the case. (1) Incomes may decline at the same time that a given price falls, and thus an additional quantity may not be purchased at the lower price, because of the lack of customary buying power. (2) The desire of persons to use a certain good may change at approximately the same time that its price falls. (3) Further, what may be called the state of the market may alter so considerably that a decline in the price of a given commodity may not lead to an increase in the volume of purchases. The first two of these points are self-explanatory. The third, however. calls for discussion.

The State of the Market. — The demand which business men have for raw materials, equipment, and finished products which they are to re-sell varies with their forecast as to the probable course of the market. If they believe that business is to be good, their demand is strong; while if they believe that business is not going to be good their demand falls off. Rising prices tend to denote advancing prosperity, and falling prices tend to be indicative of a decline in prosperity. Thus it comes about that a rise in the price of a certain commodity may lead to an increase in the amount of it that is demanded, while a fall in its price may lead to a curtailment in the demand for it.

A similar point may be made in the case of consumers' purchases. If a rise in the price of a given article is taken to mean that the price is going to advance still farther, buying will be stimulated. That is, purchases that would not normally have been made until later will be made at once. The demand schedule at the present time will thus be increased. Also, of course, if a fall in a price is taken to mean that the price will fall still further, customary purchases will be postponed: the demand schedule will be reduced.

What really happens, then, in such cases is that the demand schedule, or demand curve, is altered. The fall — or the rise — in price does not leave all other things the same. The general principle of demand, that the quantity of a commodity that will be taken varies inversely, though not proportionally with the price, all other things being equal, is, therefore, not invalidated by these cases.

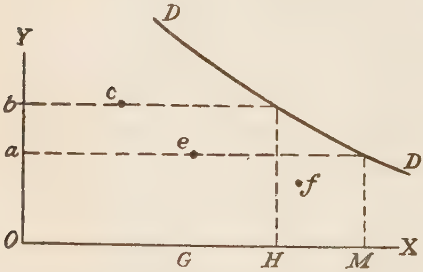

FIG. 13.

The accompanying diagram indicates that if price is O b, O H units will be purchased, and that if the price should fall to O a, the amount purchased would increase to O M. If now, the price should fall from O b to O a, and if the amount taken should be less than O M, this would mean that the demand curve was no longer D D′, as shown on the diagram, for if it were, O M would be taken at price O a. The demand curve would have moved to the left. If at the new price, O a, O G units will be purchased, the new demand curve includes point e, and, we may assume, also points c and f. The fall in price from O b to O a did not then in this case leave all other things the same: it caused the demand curve to shift to the left.

This situation is well illustrated by the stock market. At any given time, under the conditions that then prevail, a fall in the price of a given stock may be expected to lead to increased purchases of it. But if the price of this stock should fall, and also the prices of several other stocks, the number of shares of the stock in question that would be purchased would normally be reduced. Persons wishing to sell would be forced to quote still lower prices in order to find purchasers. What happens, to repeat, is that the decline in the prices of several stocks changes the demand for any one, as compared with what it would have been if the price of only the one had fallen.

But in all such cases, the fall in price will not check buying, nor will a rise in price increase buying, except within somewhat narrow limits. These limits are the normal range of price fluctuations for the commodities concerned. If the prices of most commodities begin to fall, this will check buying, but as prices continue to fall, the customary buyers will finally come to believe that prices cannot fall much further, and buying will then be stimulated. Similarly, if a rise in the price of a commodity leads to increased purchases, because the price is expected to rise still further, such increased buying will necessarily be checked when buyers come to feel that the price cannot rise much further.

It is thus normally only within the limits of the usual ranges of the price of a commodity from a high to a low price, that a fall in price checks buying or a rise in price increases buying. And, further, to repeat again the point developed above, such effects on demand result from the fact that all things other than the one price change do not remain as they were before the change took place.

Dividing Up the Demand Schedule. — If it were possible for the seller or sellers of a given commodity to divide up the demand schedule for it and to sell first to those who will pay a high price, then to those who will buy only at a lower price, and so on until the supply is exhausted, money receipts would normally be far larger than when all units must be sold at a single price. But this cannot usually be done in an open competitive market.

All persons who buy sugar in any one city at any one time tend to pay the same price. If there are 300,000 pounds to be sold during the week, and if in order to sell this amount the price must be set at 6 cents a pound, all persons will normally buy at this rate. Obviously, some persons, especially those who are very rich, would be willing to pay a great deal more than this, but they do not have to pay more than does the marginal buyer of sugar, who, in this case, will not pay more than 6 cents. If the sellers of sugar could divide up the demand schedule it would be to their advantage to do so. But they are unable to do this. The product is of uniform grade, and as one buyer will refuse to pay more than another buyer has to pay, the desire of sellers to dispose of their stock will lead to a single price to all buyers.

Surgeons are perhaps the most successful of all sellers in dividing up the demand schedule. They perform a few operations at a very high price, others at a lower price, and so on, including, perhaps, the performance of some operations for which they make no charge at all. If it were necessary for them to charge one uniform price, as do the persons who sell sugar, most of them would suffer a great curtailment in income. Other professional men are also able to vary their charges somewhat according to what their clients will pay. Some manufacturers are able to accomplish this end by assigning different trade names to identical units of their product. Thus through deception they divide up the demand schedule for their product. But in general, demand schedules cannot be divided. A uniform price must be charged for all of the units of almost all goods and services.

The practices of hotels in having two dining rooms in which different prices prevail, and of railroad companies in having different classes of services, and book publishers in issuing different editions are sometimes spoken of as dividing up of the demand schedule. But these practices are more than this. They result in different kinds of goods. To dine in the "crystal room" is not the same as to eat in the "grill room." There is a difference between a pullman car and a day coach, and an early edition of a book bound in cloth is not the same as a later edition in paper. Considered thus, the demand schedules in these cases are not divided; the goods are different and thus the demand schedule for each one is separate and distinct from, though not unrelated to, the demand schedule for the goods that are similar to it.

The Forecasting of Demand. — Business is carried on very largely in anticipation of future demand. A manufacturer does not expect to sell his goods until several months after he buys the raw material necessary to their production. If a new plant is to be constructed, it is normally expected that the goods to be produced therein will not be sold until perhaps a year or more later. Further, even a retail merchant must place his orders and fill his shelves long before he expects to be able to dispose of the goods. Business men are thus interested in the demand which is to prevail several months after they make their commitments. Accordingly, a great deal of attention is being given to the forecasting of demand. This amounts largely to forecasting the buying power of different groups in the society. Are the farmers to have larger or smaller incomes? What of industrial laborers? Are their wages going to rise or fall? Are they going to be more fully or less fully employed? Is business going to be good or bad? These are some of the questions that must be answered in order to form a conclusion as to the probable course of demand.

Experts are giving an increased amount of attention to this problem. Bureaus of business research and forecasting agencies are seeking to serve business men by forecasting the probable demand for their products. In so far as demand can be foretold, business men will not make the mistake of producing goods that cannot be sold. Success in forecasting will thus tend to reduce business failures and thus reduce the waste of economic resources. The problem of business forecasting will be discussed more fully in a later chapter.

PROBLEMS AND EXERCISES

241. (*a*) Construct (1) a supply and demand schedule and plot same.

(*b*) Arrange (2) another supply schedule that with the demand schedule as in (1) will give a price different from the price in (1).

(*c*) What will this price be?

(*d*) How is the "demand" affected, in the sense of amount purchased, when supply is changed from (1) to (2)?

(*e*) Is the "demand" altered in the sense of the demand schedule, (in the sense of the demand curve)?

(*f*) In what sense, or senses, was supply altered?

(*g*) In which direction was the supply curve shifted?

242. Illustrate, from your own experience if possible, the effect of the attitude of others upon the demand for goods.

243. Does the demand curve for transportation on the city street car line slope downward to the right? If so, why does it?

244. (*a*) Mr. X is buying 10 cars of coal each day at $3.45 per ton. If the price should fall to $3 per ton, under what conditions would he buy more than 10 cars per day? Less than 10?

(*b*) Draw a demand curve to show the demand as at first. May this curve be applicable to his increased purchases at $3 per ton? Explain. To his decreased purchases at $3 per ton? Explain.

245. Illustrate the problem of elasticity of demand by assuming that the business manager of *Life* is contemplating raising the price to 35 cents per copy.

246. Consider the demand for Parker fountain pens. (*a*) Is it highly elastic or only slightly so? Give an argument to support your view. (*b*) Would the manufacturers of this pen be interested in knowing the facts concerning this matter? Why? (*c*) Are all demand schedules elastic? Why? Within all possible price changes?

247. Name three or four goods for which you should expect the demand to greatly increase during a period of abnormal business prosperity. Three or four for which you should expect the demand to increase but little during such a time. Explain.

248. Illustrate by means of diagrams, (*a*) unitary elasticity, (*b*) less than unitary elasticity, (*c*) more than unitary elasticity.

249. (*a*) Name two products for which you consider the demand to be elastic above the customary price but inelastic below it.

(*b*) Name two products for which you consider the demand to be elastic below the customary price but inelastic above it.

(*c*) Name two products for which the demand is elastic both above and below the customary price.

(*d*) Plot a demand curve for one of the goods of each of these classes (*a*), (*b*), (*c*), and explain how knowledge of these demand curves will cause the business men to use different price policies with regard to each.

250. Why are surgeons fairly successful in dividing up the demand schedule for operations? Why can't the farmers divide up the demand schedule for potatoes?

251. Of what significance from the standpoint of forecasting demand would the following be to business men: News of war between Russia and England? Long-continued rains in the corn belt at planting time? A failure of the Indian cotton crop coupled with a large crop in the Southern States? An apparently safe prediction that there is to be a 50 per cent decrease in building activity in the United States within six months?

CHAPTER XXI

SUPPLY — (1) FIXED PHYSICAL SUPPLY

Supply Defined. — The term *supply* is used in three different senses in the discussion of price. It is used as the counterpart of the word *demand* to mean (1) the number of units of a good or service that will be offered for sale at various prices, or (2) the number actually sold. In the first sense the word is synonymous with the terms *supply schedule,* and *supply curve,* and in the second sense it means, as indicated, the supply that is actually sold. The third meaning of the term as used in relation to price is indicated by the more complete term *physical supply.* The term is used in the third sense as a basis for classifying goods into two divisions, fixed supply goods and variable supply goods.

By fixed supply goods we mean goods that are not being produced and of which the physical supply is thus fixed. Not many goods belong in this category. Land is by far the most important good in this group, but, as is noted later, land is to some extent produced, the same as are other goods. Crops between harvest are fixed in supply and also goods which are out of style. The works of persons no longer living, although of minor importance in the subject of price, are similarly fixed in supply. The fixity in supply has to do with the physical supply, it must be emphasized, and not with the amount that will be sold. Owners of fixed supply goods may refuse to sell except at certain prices and thus the amount that will be sold is not necessarily fixed. It is merely the physical supply that is fixed.

In contrast with the goods that are fixed in physical supply, the physical supply of most goods varies in quantity, or is subject to variation from time to time. All of the goods that are produced — all of the products of farms, mines, fisheries, or manufacturing plants, all houses and buildings, and all the services of transportation companies, theaters, etc. belong to this class of goods.

The significance of the division of goods into fixed physical supply goods and variable physical supply goods rests on the relation of cost to price. The price of the goods of which the physical supply is subject to variation tends to equal cost. If the price of a good of this kind comes to exceed the cost of producing and selling it, the quantity flowing on to the market tends to be increased and its price falls; while if the price of such a good is below the cost of producing and selling it, the quantity coming on to the market tends to be reduced, and its price rises. This relationship between price and cost for such goods will be more fully analyzed in the following chapter.

But there is, generally speaking, no relation between the cost of the goods that are fixed in physical supply — that are not being produced — and their prices. Since there is no control over the physical supply of such goods, price cannot be altered by increasing or decreasing the physical supply, as can be done in the case of the goods that are being produced. There may, however, in some cases, be a close relation between the cost and the price of such goods. An owner of certain units of such goods may refuse to sell at less than the cost price to him. By similar action on the part of other persons, the price of the good in question may be kept approximately at the figure that represents the cost that was incurred in producing it, or in the purchase of it by present owners. But after allowing for such control over the supply sold, it can be safely said that the relation between price and cost in the case of the fixed supply goods is far less marked than in the case of the variable supply goods. The sellers of fixed supply goods, for the most part, take what they can get. They cannot force up the price by reducing the monthly or yearly output, because such goods are not being produced.

Withholdal Prices.[1] — The prices of goods of which the physical supply is fixed are, then, usually far less subject to control by the sellers than is true of the prices of goods of which the physical supply may be varied by an increase or a decrease in the physical output per month or per year. Broadly speaking, the prices of the fixed physical supply goods are determined by buyers rather than by both buyers and sellers, as in the case of variable supply goods, which includes most goods. But, as was just indicated, sellers may exert some control over the prices of such goods by refusing to sell except at a certain price. The prices which they insist upon having before selling may be called *withholdal prices.*

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[1] Term suggested by Professor A. B. Wolfe.

There are three factors that determine such withholdal prices. The first may be characterized as the state of the market. If the owner believes that the price that he will be able to get later, as compared with the price that he can get now, will more than compensate him for the loss of interest on the money he could get by selling it now and investing the receipts, he will be prompted to hold it. A second factor in the situation, as indicated above, is the price that the owner paid for the good in question. Persons are reluctant to sell goods below the prices which they paid for them. Further, the desire to receive the amount paid tends to make one hopeful of the future and thus operates to make one believe that the price is going to rise. Thirdly, the financial position of the seller is an important factor in the situation. If he is hard pressed for money, the other two factors may be of no moment. He will then tend to sell at any price that he can get. But if he is not in need of money, the other two factors may determine the price that the seller is willing to take.

The Price of Land. — The most important good in the group of goods of which the physical supply is fixed is land. The importance of land and of its price is such that the forces determining the price of land will be discussed at some length.

The supply of land within a given area of a business district is necessarily fixed in amount. There can be only a given number of square feet of land within, say, two squares of the principal business corner of a city. With streets laid out and paved, and, we may assume, not subject to any change such as the dividing of present blocks, the street frontage is not subject to alteration within such an area. What will determine the price that will be set upon such land? Or, better, what will determine the rental price of such land, for the selling price of land is derived from its rental price. Broadly speaking, this will depend entirely upon the demand for such lots. If all of the lots are to be rented, the owners of the lots will have no part in setting the price. Owners of land, sellers, can exercise control over price only by altering the supply of lots on the market by withholding some of them. If this is not done, the demand schedule for the number in question will determine the price.

The price-making forces differ then from those which were illustrated by the suit of clothes in Chapter XIX. In that case the sellers were very important in the determination of price. They had control over supply and could either increase or decrease the number of suits that were coming on to the market each month. But in the matter of this land, the supply within the given area cannot be increased, nor will the owners normally reduce the available supply by withdrawing any of the lots from use. This means that the owners of the land have no control over its price through a variation in its supply. Price will thus depend solely upon the demand for the available sites.

Land is also unique in that business sites are not uniformly desirable. Perhaps no two lots in a business district will command exactly the same rental price. Each one is in a class by itself. Hence instead of speaking of the rental price of the lots taken together, as we speak of the price per suit of 10,000 suits of clothes of a given grade, we should consider each lot separately. Thus our statement would be that the rental price of a lot will depend upon the demand for that particular lot. If the demand schedule for a given corner lot is as shown in the accompanying schedule, its rental price would be $450. At $400 two persons would wish to rent it, and at $375, five persons would like to have it. It is only when the price is raised to $450 per month that all but one would-be leasee is excluded. Phrased differently, the bidding of these persons for this lot will raise the rent to $450. The owner would take $350 as shown in this schedule. In fact, we may assume that he would take a great deal less than this. As only a dollar a year is better than nothing, we may say that the lot will be let to the highest bidder, no matter how low that offer may be.

SCHEDULE 6

Supply and Demand Schedule
for a Corner Lot

Supply	*Rental Price per Month*	*Demand*
1	$500	0
1	450	1
1	400	2
1	375	5
1	350	7

The Supply Schedule of Land a Typical Schedule in Certain Cases. — Some land is held out of use, as anyone knows who has seen a vacant lot. The owner in such a case has placed a certain price on the lot and is holding out for that figure. His expectation is that the price which he will get later as compared with the price that he can get now, will more than compensate him for the loss of interest on the money which he could get by selling it now at the price that it would bring. It is only because its price is thus expected to advance that a parcel of land is held out of use. If there are no expectations of a rise in its price, land will be let at any price that it will fetch.

Vacant lots are found almost exclusively in residence districts. Here there is normally no opportunity to rent the land, as it is seldom built upon except by an owner. The owners in such cases do exercise control over price by controlling the available market supply. They refuse to sell except at certain prices. The supply schedule is a typical schedule: the number of units that will be sold increases as the price rises. This means that the price of land in certain areas may thus be kept equal to the prices that present owners have paid for it. The market supply of land that is coming into use for residence sites is thus somewhat similar to the supply of an ordinary article of commerce: supply varies with price. But there is a marked difference between land

and most other goods. When land is once put into use as a site for residences, it tends to remain in that use, unless it is transfered to use as a business site, while of course almost all other goods wear out or are otherwise used up and have to be replaced.

Land which is taken up for agricultural purposes also tends to remain in this use, unless it is taken over for building sites, or by a development company that plans to sell it for this purpose. Some farming lands are abandoned and some building sites are withdrawn from this use, but normally the supply of land in use is not decreased. The reason for this is, obviously, that the population is increasing constantly, hence, land tends to be worth something, and so long as it is worth anything it pays to use it rather than to abandon it.

The Cost of Bringing Land into Use. — To return to the above discussion relative to there being some similarity between the supply schedule for land and manufactured goods, it may be added that the supply of land in the various uses has a further similarity to the supply of manufactured articles, in that the increase in supply in any use is somewhat related to the cost of making it available. The cost of draining or irrigating farm land, of building roads and car lines, and of otherwise making land available for use, must be exceeded by the price of the land, or by the income that is expected to be received from it, or men will not undertake the expense of making it available. Further, it is to be expected that expense will be incurred to bring land into a market whenever the returns will justify the expenditure. That is, the returns from bringing land into use tends at least to equal the cost that is involved.

Income from Land May Greatly Exceed Cost of Bringing It into Use. — But this correspondence between expense and return applies only to the land that is being brought into use. Not enough land can be added to the supply to bring the returns from the more favorably situated lands down to the expense of making the additional land available. But, of course, any addition to the residence area of a city, or any extension of transportation facilities increases the competition which the land already in use has to meet. The rent of the older lands is thus reduced, as compared with what it would otherwise have been, by any addition of new land. This, however, has not been sufficient in the various sections in America to prevent a marked increase in the price of the more favorably situated land. Stated differently, the fact that land in the favorable locations cannot be duplicated leads to a rise in its income without regard, or with very little regard, to the cost principle of making other land available. Indeed it is only as the income from land that is favorably situated rises, that the possible income from outlying land becomes sufficient to make it profitable to bring it into use.

The price of land, then, except in a small degree, does not correspond to the cost principle. The supply, broadly speaking, is neither augmented nor decreased as price varies, as is the supply of most goods. The owners or sellers of land, or of the services of land, thus have but little control over the supply. With supply relatively fixed, the price of land is thus largely a matter of demand, in view of the given supply.

The Rental Price and the Selling Price. — It was observed above that the selling price of land is derived from the rental price of land. A better statement of the case is that the rental price is the price of the use of land for a limited period of time, a month or a year, usually; while the selling price is a composite price of all of the future uses of the land. Still more accurately, the selling price is the present worth of all of the future expected yearly rentals of a parcel of land. The present worth is found by discounting or capitalizing the expected future incomes. If, for example, the present rent of a parcel of land is $400 per year, and if the land is expected to continue to yield this rental indefinitely, and if the rate of interest earned on similar investments is 5 per cent, the selling price of the land will be $8000. The present worth of $400 per year forever, discounted at 5 per cent, is $8000.[1]

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[1] The method of computing this is: 400 ÷ .05 = 8000. The student will find it interesting to compute the present worth of $400 per year forever, if interest is 5 per cent, by using the algebraic formula for finding the sum of an infinite series. The first term, it may be noted, is $400 ÷ 1.05, assuming that the land is to be purchased one year before the first installment of rent will be due to the new owner.

Another statement of this matter is that with the conditions as assumed, a person with $8000 to invest would be willing to pay that sum for this land, because he would have a 5 per cent income. Further, the competition of other investors would prevent his buying it for any smaller sum than this, as then the rate of return would be above 5 per cent.

If the above assumptions are changed to read that the yearly rent of the land is expected to increase in the future, the selling price will be above $8000, say $10,000. In that case, the present rate of $400 will represent less than 5 per cent of the selling price. If, on the other hand, the yearly rent is expected to decrease in the future, the selling price will be less than $8000, say $6000, and the present rent, $400, will be more than 5 per cent of the selling price.

The process of capitalization is similar to the process that is used in the case of finding the present worth, or the market value of stocks, bonds and other investment securities. Indeed, the principle of capitalization is involved in the determination of the value of practically every durable good, although the process is in many cases very crude, the result only roughly approximating the amount that would be derived by a process of careful capitalization. The price of a watch, for example, represents the present worth of the series of future services, or incomes, which buyers expect to derive from watches.

The Taxation of Land. — (1) *House Tax.* — The difference between the price principle that applies to land, and that which applies to most other goods is strikingly illustrated by considering the effect of levying a tax upon land and upon houses. If a tax is levied upon houses, to be paid each year, the net income from houses will be reduced, and persons will be less anxious to build houses than they formerly were, and thus the supply of houses will be less than it would have been if the tax had not been imposed. As a result of the lessened supply of houses as compared with the supply that would otherwise have been forthcoming, the yearly rental of houses will rise, and will remain above the figure that would have prevailed if the tax had not been imposed. The tenants of houses will thus pay the tax in the higher rentals which they will have to pay to the owners of the houses they use.

The selling price of houses would not normally be affected by such a tax, as the cost of building houses would not be altered by the tax. Neither would the net income of owners be less in the long run, because of the tax. As soon as sufficient time had elapsed to permit the demand for houses to increase, as a result of a growing population, then since no new houses are being built, or at most but few are being built, the rent of houses will rise, and the owners after paying the tax will have the same net income as before the tax was levied.

The rapidity with which this adjustment to the tax is brought about will depend upon the rate of growth in the population of the locality, or city, concerned. If the population is growing rapidly, and if many houses are being built each year, a slight check in the rate of building might be sufficient in a year's time to cause house rent throughout an entire city to be so increased that the burden of a new tax would be thrown at once upon tenants rather than upon owners, wherever houses were occupied by tenants.

This analysis applies also to all kinds of buildings — stores, office buildings, hotels, warehouses, and factory buildings. The fact that such buildings are almost always under construction, or are being enlarged, in most American cities, brings it about that any tax imposed upon such buildings would check the increase in supply until the rent that could be received would be sufficient to pay the new tax in addition to all of the other costs that are involved.

But if the population of a city were not increasing, if no new buildings were being constructed, or old ones enlarged, then a tax could not be shifted to tenants. The supply would not be reduced below what it would otherwise have been and the rent from buildings would not rise.

(2) *A Land Tax* — Does the same line of reasoning apply to a tax on land? The answer is that it does not. If a tax is levied on land, this does not drive any of it out of use. This is similar to the analysis in the case of houses. But will the addition to

the supply of land be any less because of the tax? Clearly a tax could not operate to reduce the total physical supply of land. But could it reduce the supply in the different kinds of uses — business sites, residence sites, or agricultural land? The answer is that it would be possible if a tax were levied to apply to city land, for example, but not to agricultural land. Such a tax would check the transfer of agricultural land to residence uses, and would thus make the total supply of land in a given city less than it would otherwise be. This would mean that the rent of city land would thus increase, because of the tax, and it is conceivable that the rent might increase by the amount of the tax, thus throwing the tax burden on tenants rather than on owners. Hence, in so far as city taxes are heavier than taxes in the country, the city land taxes are to some extent shifted to the tenants.

But if land taxes are levied uniformly on all land according to land rent, or land value, then the supply of land in any one use will not become any less because of the tax. Any land that is in use will not be withdrawn from use, and allowed to lie idle because a tax is imposed. The reduction in the landowner's income that is caused by the tax will not lead him to reduce it still further by withdrawing his land from use and thus forgoing all income from it. Further, in the case of land upon which buildings have been constructed, the owner could not withdraw the land from use even if he wished to do so, for that would mean the sacrifice of the building. Thus the supply of land in use would not be reduced by the withdrawal of land from use. Hence, any reduction in the supply of land in use, as compared with the supply that would have been in use if the tax had not been imposed, would come from the lack of addition to the supply. But if all of the land of a community is already in use, this consideration is not applicable. A tax in such a community could not, then, affect the supply of land that is in use. If the supply is not less because of the tax, then the rental price of the land cannot, because of the tax, be higher than it would otherwise be. Nor can the price of the commodities produced on the land be any higher because of the tax, if the supply of the land in use is not reduced as a result of the tax. The owners of the land under such conditions do not, then, escape the burden of a land tax; they cannot shift the tax to their tenants or to their customers.

Unquestionably, the land taxes in America do not operate to reduce the supply of land that is in use. Our land taxes are levied upon, or according to, the value of the land. This means that they are levied on land rent. So long as they are any less than the full land rent, the owner will still have some net rent which will make it advisable for him to continue to use the land.

If a tax were levied upon every acre of land in use regardless of its value, the supply of land in use would be reduced. Such a tax would fall upon the marginal land, that is, land that barely returns enough to make it advisable to continue to use it. This would drive such land out of use and thus reduce the supply of the products from land and hence raise the prices of such products. The tax would be shifted to consumers. But the policy of taxing land on area, rather than on a value basis, is not practiced.

The Effect of a Land Tax on the Price of Land. — It follows from the above analysis that a tax on land depresses the value on the price of land. If the landowner cannot increase his rent, as a result of the tax, the net rent which the land yields is thus decreased, and the value of the land is lessened. If a parcel of land which bears $400 rent per year, and which is expected to continue to yield this sum, is taxed $100 per year, and if the tax is expected to be continued indefinitely, the land would be worth, at 5 per cent, not $8000 but $6000. The $100 tax then would have reduced the value of the land by $2000, because $2000 is the present worth of $100 in perpetuity at 5 per cent. The state, or city, in such a case would in reality come to have a one-fourth interest in this parcel of land.

The increase of a land tax then tends to confiscate a portion of the land value, and, likewise, a reduction in an established tax is a gift to the owner of that portion of the land value that has in effect belonged to the state.

New Owners and the Land Tax. — Since the price of land is reduced by the present worth of the expected tax payments, it has been concluded by some persons that the new owners of land are placed in a tax-favored position. On the basis of this conclusion it has been contended that land taxes should be raised frequently in order that new owners might be taxed. A moment's reflection shows that this position is not tenable. The forces of competition would not permit a few persons to get such a tax advantage over other persons. If prospective land purchasers were about to secure such an advantage, the competition for land would raise its price so as to make the net returns in that field equal to the net returns in other fields. The prices of two bonds, one of which is tax free while the other is not, tend to be so adjusted to each other that the net returns from each are the same. Similarly in the case of land, the price of it tends to be such that purchasers do not get a tax advantage. The tax burden falls on the owner at the time the tax is imposed, but the new owner buys the net rent — the rent minus the tax — at a rate of capitalization that does not make him any better off so far as taxes are concerned than he would be if he had invested instead in fields in which new purchasers do not buy tax-free.

Goods Other Than Land. — In addition to land, there are, as was indicated in the early part of this chapter, certain other goods that are fixed in supply. The prices of these goods are determined similarly to the price of land: the prices depend largely upon demand in view of the physical supply. Sellers do not exercise control by withholding supply save within narrow limits, and neither do they affect price by augmenting the supply.

In conclusion, it is not socially necessary in the case of the goods of which the physical supply is fixed that price be kept equal to cost in order to insure a continuous flow of goods on to the market. The supply of such goods is not being augmented — it is fixed. Hence the cost principle of pricing does not apply to them.

If, however, the entire stock of a given good is held by one person — if he has a monoply of it — he may reduce the supply which is to be sold, in order to increase the price. Whether it will be profitable for him to do this will depend upon the slope of the demand curve. This will be further discussed in the chapter, "Monopoly Price." Further, as noted above in regard to land, when many persons own units of a fixed supply goods, some control may be exercised over price by withholding units from the market.

PROBLEMS AND EXERCISES

252. Why, generally speaking, is there no relation between the cost of goods that are fixed in supply and their price, while cost of production of variable supply goods is generally closely related to their price?

253. What three factors would determine the price that would be asked for the original manuscript of Scott's *Ivanhoe?*

254. In what way does the determination of the price of land resemble the determination of the price of a scrapbook of Leonardo da Vinci? How does land price determination differ from the determination of the price of the wheat that is upon it?

255. Does the relation between the rental price and the selling price of land resemble the relationship between the market value of a stock or bond and its earning capacity? Explain.

256. "The imposition of a new tax on a piece of land is equivalent to a partial confiscation of said land; the removal of a long-standing tax is equivalent to a free gift to the owner of said land." Explain fully. (Taylor.)

257. If the land now bearing $400 per year should suddenly be expected to increase in rental value after a few years, what would be the effect of this fact upon present value? Upon the rate of interest received for the next few years upon the market value of the land?

258. What will be the effect of abolishing a tax of $70 per year upon a piece of land if the rate of return on land investments is 4 per cent? Explain.

259. "Since new purchasers buy free of a land tax, land taxes should be raised every ten years in order to make the new owners share the tax burden with others." (*a*) Is the first clause sound? Explain. (*b*) Are new landowners in a tax favored position? Explain. (*c*) If the program proposed here should be carried out, would this catch the new owner? Explain.

260. Certain reformers urge that taxes on buildings be decreased, or wholly removed, and taxes on land be correspondingly increased. What effect would this tend to have on: (*a*) The rent of city lots? Explain. (*b*) The selling price of city lots? Explain. (*c*) The rent of city buildings? Explain. (*d*) The selling price of city buildings? Explain. (*e*) Why do reformers propose this change in tax policy?

261. "The immediate effect of a tax on houses may be to lower the rent charged for rooms." Explain.

262. Who will tend to bear a 5 per cent tax on a building lot? On table salt?

CHAPTER XXII

SUPPLY: (2) VARIABLE PHYSICAL SUPPLY

As stated in the preceding chapter, almost all economic goods belong to the class of variable supply goods. The quantity that is produced for sale varies with the price that buyers are willing to pay. The variation in the quantity produced and offered for sale tends to bring it about that the price received equals the cost of producing and selling such goods. There are divergencies, of course, between cost and price; they are seldom exactly adjusted to each other. But differences between the two tend to be removed. If price is much above cost, supply tends to be increased and price tends to fall; while if price is below cost, producers will restrict production and price will rise. This is then the long-run price principle that is applicable to goods of variable physical supply.

What Is Cost? — By cost is meant the expense that is incurred in production. This evidently includes all sums that are paid out for equipment, raw material, the use of land, the loan of money, insurance, advertising, taxes, and any other item of expense. It also properly includes a charge for the services of the man who is undertaking the enterprise. The salary that he could secure as an employee in some other firm must be reckoned as an expense if he works for himself. Further, a sufficient amount of profit to compensate for the risk of business failure should also be included as an expense. All such items must be covered by the receipts from the business, if the price can be said to equal cost.

Why Is Cost as It Is? — The answer to this question involves the analysis of price relationship that was given in the first chapter that deals with price. The wages that one business man must pay to his employees will be determined by what other employers will pay. The price of raw material to one manufacturer will be determined on the one hand by what other manufacturers will pay, and on the other hand, by what the producers of raw material must get for it if they are to be able to engage in its production. The price that they must get will depend largely upon the wages that they must pay to the laborers that they employ. And the wages demanded of one employer, to repeat, are somewhat closely related to the wages that other employers will pay.

Similarly, the price, or rent, that one business man must pay for the land that he uses will depend upon what other persons will pay for it. Likewise, the rate of interest that he must pay to the bank on the money that he borrows is largely determined by the competing demands of other borrowers, and the willingness of bankers and other persons to loan money.

Another phrasing of this problem is that the cost of any item to one person or firm is a selling price to some other person or firm, except for the matter of self-employment and risk-taking. Unquestionably, all prices are related to each other, albeit adjustments among them are often very crude. For long periods of time, differences among certain prices and among certain wage rates may persist in spite of the tendency for them to be equalized. But such cases do not prove a lack of relationship among prices: they merely prove that prices are not always nicely adjusted to each other.

Past Costs and Future Costs. — The point is sometimes made by economists that it is future cost and not past cost that influences prices. Suppose that it *has cost* $3 per chair to manufacture a stock of chairs; suppose further that it *will cost* $10 each to manufacture bookcases. The argument is that since the chairs have been made — since they are here — the cost that was incurred is of no effect in determining their price because it cannot affect the supply of these chairs, except as it operates as future costs to control future production. But in the case of the bookcases, if they cannot be sold for $10 each, they will not be produced because their cost will be $10. Hence, so the argument runs, it is to future or expected costs that prices tend to conform: it is expected costs that determine the volume of production and hence price. There is some validity to this argument, but it neglects an important fact in pricing.

As was developed in the preceding chapter, the quantity sold at any one time is not necessarily, nor usually, the total volume that is for sale. Sellers do not cry their wares at auction and take what is offered. On the contrary, they stipulate prices at which they will sell and hold on doggedly in the hope of getting what they ask. Their asked prices tend to correspond closely to the *cost that they have incurred.* This attitude of sellers testifies to the game element in economic activity. To recover at a profit what one "has in" a good or a stock of goods is to win, to take less is to lose. The one outcome leads to elation; the other to a sense of defeat. Men, having been conditioned as they have been in regard to economic activity, valiantly attempt to recover the cost that has been incurred. As noted in the preceding chapter, there are two other factors that influence sellers in setting withholdal prices, only one of which will be repeated here. The financial limitations of most sellers impose limits to the length of time that they can hold out for a particular price, but even a short delay in selling affects price. Market supply at the going price is thus reduced, and price is accordingly higher than it would otherwise be. Costs incurred are thus effective in the pricing process.

Cost Differences. — The principle has been repeatedly emphasized that in the case of variable supply goods, price tends to equal cost. But there are often great variations among the costs of different producers. Indeed, it would be strange if the cost of production should be exactly the same in any two factories, stores, or banks, or on any two farms, or in any two mines. If price tends to equal cost then, with the cost of which firm does it tend to be equal? That of the low cost firm? or of the high cost firm? or of the firm that has an average cost?

The clew to the answer to this query is to be found in the causal relationship by which price and cost become equal. This is, it will be recalled, through the adjustment of supply and demand. Hence, of the different producers in any one line, the significant one is the one whose supply would be the first to be withdrawn if price should fall. This producer is, by definition, the marginal producer. The price of any commodity must then at least equal the amount that the marginal producer in that line of work must have in order to induce him to continue in the business. If it falls below this point he will cease to produce the commodity, the supply will be decreased, and the price will rise. Another producer will then become marginal and if the price falls below the amount that he must have if he is to continue in the business, he, too, will leave this field and another producer will become marginal.

The amount that marginal producers must have in order to induce them to continue in the business is commonly referred to as cost to them. However, the amount which a business man must have if he is not to leave a business is not necessarily the same as the cost to him of his operations. If, for example, money is used to build a hotel, the amount spent becomes part of the cost of furnishing hotel services; but if the owner is not able to sell enough services to meet this cost and also the cost in the form of running expenses he will not necessarily discontinue the business. If the cost for the investment, the interest on the money invested, and insurance and taxes, amounts to $50 per day in the case of a hotel and if the running expenses amount also to $50 per day, the owner, in most cases at least, will not leave the hotel business if he can get $70 per day gross income from the operation of the hotel. This will enable him to pay his running expenses and have $20 left over to apply on his fixed expenses, which amount to $50 per day. Thus, by continuing to operate he would lose $30 per day, but if he should discontinue operations he would lose the amount of his fixed investment, or $50 per day. Thus, the amount that the hotel keeper must receive from the sale of hotel services in order that he may be induced to continue in the business is not a sum that is equal to his total cost.

This point, however, has to do with short-time rather than long-time operations. Over a long period of time, if the price that can be received from the sale of hotel services is not sufficient to pay the total cost involved in furnishing such services, the hotels that wear out or are burned down will not be replaced and thus the price charged for hotel services can be increased. Thus, in the long run, we are warranted in speaking of the amount that the marginal producer must have in order to induce him to continue in the business, as being synonymous with the cost that is involved.

The Margin of Transference. — It may well be noted again that the marginal high cost firm is not necessarily the least efficient one. The opportunity which a very efficient firm has, to make large profits in some line of production other than that in which it is engaged, may make it the marginal firm. In terms of cost, the opportunity to make large profits in another line of work is part of the cost of continuing in a given line. To illustrate this point with reference to wages, suppose that X could make $9000 per year if he would work for Y. He must then reckon his wages at $9000 when he works for himself, assuming that all other things are equal. If it proves to be impossible for him to earn this much as wages at self-employment, he will, we may assume, leave the work in which he is engaged and take employment with Y. This will prove him to have been a marginal producer in the line of work in which he was formerly engaged, even although he was unusually efficient in it.

Similarly, the marginal producer of a manufactured article may be on the margin of not continuing in that line of work because of the opportunities that prevail in other lines of manufacture to which the factory might be devoted. The usual farmer furnishes a neat illustration of this point, since he may turn so easily from the production of one crop to the production of any one of several other crops. Thus, the person who is on the margin of not producing corn may be a very efficient farmer. He may be far removed from the margin of the farming business. Yet a slight drop in the price of corn may cause him to turn his energies to the production of other things.

Unquestionably, the margin of transference is a very significant concept in economics. In almost all lines of industry, the persons who are just on the margin of transferring their activities to some other lines of work are the effective factors in making the supply of the product what it is, and thus in causing the price to be as it is. The persons who are on the margin of discontinuing some one line of production because of their inefficiency, are, however, not to be neglected. They are also truly marginal and in some lines of industry they are the significant marginal producers. Obviously, this is true in those lines of enterprise in which equipment or resources cannot easily be transferred from one line of work to another. If a man is engaged in the business of mining coal, for example, he cannot transfer his equipment to some other line of work. Similarly, railway equipment and equipment for the generation of electric power are such that it is impossible to transfer them from the field for which they were designed to other fields of economic activity. In the case of such lines of work, the inefficient producers are the significant ones from the point of view of marginality, but, to repeat, in most lines of industry those who are on the margin of transferring to some other lines because of the added possibilities therein are more significant as marginal units than are the persons who are on the margin of discontinuing business activity because of inefficiency. Marginality, regardless of the reason for its existence, is of major significance in determining the volume of production and thus in determining price in the case of those goods that are being produced. Generally speaking, this means that the price of such goods must, at least, equal the cost of producing them else supply will be curtailed.

The above analysis is to the effect that price cannot long be below the cost to the marginal producer. Can it be above this figure? The answer is indicated by the analysis in Chapter XIX, relative to the two upper limits to a price. Under given conditions of supply and demand, price cannot be below cost to the marginal firm, but it may be above this figure, provided it is not so high as either to induce other producers to enter the field or lead to the exclusion of that portion of the demand that has been marginal. Whether price will be above marginal cost will then depend upon how near one or the other of the two limiting conditions is to the figure representing marginal cost.

If new firms may not easily enter the given field, price might rise considerably above marginal cost before calling out an increased quantity of production. Men are, however, so disposed to organize new firms in order to undertake a line of production that has proven to be profitable, even if rather large sums of money are required, that the price of most commodities does not rise much, if any, above the cost to marginal firms without inviting the entrance of new firms. Such new firms would perhaps then be the marginal firms in most cases. The conclusion is that price tends to equal cost to the marginal firm, which may or may not be the least efficient firm.

Variation in Unit Cost as Output Increases. — Goods are very commonly classified into three divisions on the basis of the effect of an increase in output on the cost per unit of the product; namely, increasing, decreasing, and constant cost goods. If the output of the goods in the first group is increased, the cost per unit of the product increases. In the case of goods in the second group, the unit cost decreases as additional quantities are produced, and in the case of the goods in the third group it remains unchanged. The validity of this classification, which has long been made by economists, has recently been called in question in respect to decreasing cost goods, for reasons which will appear later. Although there is genuine merit in this criticism, there is sufficient validity in the traditional classification to warrant its presentation. Further, the frequent references made to it make it desirable to include it in a book such as this.

Increasing Cost Goods. — In the case of certain goods, the long-run tendency is for the unit cost of output to increase over a period of time if all other things remain the same. Mineral products, for example, are in this category. As mines are worked, the mineral must be moved an increasing distance to the mouth of the mine, thus increasing the cost per unit as output is increased. Further, aside from this, the tendency to work the rich mines first means that in the long run the yield of product per day's work will become less. Thus, increasing cost per unit of output in the case of mines does not depend on an increase per year in the quantity that is taken out. Even with a decrease in the yearly output, the cost per unit will tend to increase. This tendency for unit costs to increase, it must be noted, depends on all other things remaining the same. Improvements may be made in mining, or new and richer mines may be discovered, or improved transportation facilities may make the product of rich mines available, and as a result the unit cost of mineral output may be greatly reduced. But, assuming a given state of the arts, the cost of mining tends to increase over a period of time.

Agricultural products are similar in this respect to the output of mines. Increasing quantities of produce per year, or the production of the same or even less quantity each year, tends to result in an increase in the cost per unit of product. This tendency may also be overcome by improvements. Better knowledge as to farming, or the construction of railroads, as in the West in this country during the middle of the past century, or an improvement such as the refrigerator car, in which fresh meat or fruit may be shipped, are illustrative of methods by which the tendency for cost to rise may be offset. This analysis is similar, it will be recalled, to that which was presented in the discussion of diminishing returns, in Chapter VII. But despite the fact that improvements have greatly checked the rise in the cost of food products during the past one hundred and fifty years, we are nevertheless safe in saying that there is a tendency for the cost of such products to increase as increased quantities are produced.

The analysis of the price tendencies of products of forests, and fisheries is very similar to that which has just been given. Improvements may check the tendency for the cost of these products to increase, but the tendency remains for cost to rise as the resources continue to be utilized.

Decreasing Cost Goods. — Economists have long held that manufactured goods are subject to decreasing cost per unit as the yearly output is increased. Professor Alfred Marshall explained this in terms of internal economies and external economies. By internal economies he meant the savings per unit of output that could be effected within a given establishment as output is increased. For example, as output is increased in any establishment, it may be possible to increase the degree of specialization that prevails. Not only may persons specialize more as their numbers increase, but equipment may also be more highly specialized as there is opportunity, because of an increased volume of production, to use it more fully. This may be evidenced by the building of new equipment, as well as by using more intensively the equipment already in use. Further, of course, if a plant has been built that is so large that it cannot be fully used because of a lack of market for the product, any increase in volume of output will reduce the overhead cost per unit of product. That is, if a plant is "overbuilt," the given firm will have decreasing costs per unit of product as it grows up to the plant, provided all other things remain the same.

By external economies Marshall meant the savings that come from the general development of the industry, such as the growing body of "trade-knowledge," and "the general progress of the industrial environment." Under the last division, it would seem, might be placed the economies that tend to come to a manufacturer because of an improvement in banking or transportation or merchandising. Clearly, external economies of this sort are found in all lines of work as economic progress takes place. Mining and agriculture are as much affected thereby as is manufacturing. The net result of external economies is to reduce the cost of all goods; although over a given period of time, the increase in "trade-knowledge" may affect the cost of producing certain goods very appreciably and not affect the cost of producing other goods.

It is in regard to the internal economies that the question as to the validity of the classical analysis has been raised. This point has been made by Professor Frank H. Knight.[1] Certainly there has been considerable confusion of thought here. As Knight argues, the fact that costs decrease as a factory building is used more and more nearly to capacity does not mean that output is genuinely subject to decreasing costs. Such a condition is merely a case of a plant's having been overbuilt — of its not being the right size. There is, of course, a right size — the most economical size per unit of output — for any business operation. If a firm began with a scale of output in excess of plant capacity and gradually reduced output this would mean decreasing cost per unit, as well as does the usual way of beginning with too small a scale of output in relation to plant capacity and gradually increasing output.

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[1] "Costs of Production over Long and Short Periods," *Journal of Political Economy*, April, 1921, Vol. 29, p. 304.

The railway industry has also been generally described as subject to decreasing cost as the volume of the railway services sold has been increased. Clearly the added cost to a railway company of carrying an additional car of freight each day between New York and Chicago, is much below the average cost per car of carrying the other cars; or the extra cost to a railroad of carrying one additional passenger is almost negligible, as compared with the cost for the other passengers taken together. But, this is clearly, in part, a case of the overbuilding of plant. In America, railroads were overbuilt in the sixties and the seventies and there followed from this, logically enough, rate wars among the roads, as they fought for enough business to keep the rust off their tracks. Along with this there developed practices of discrimination by the roads as they attempted by secret agreements to get business. This intensive struggle to get business — to sell the transportation service which was going to waste — emphasized the idea of decreasing costs. Any one of the roads could have enlarged its business at but very little additional cost. But this was because they were overbuilt. However, since a railway track between two cities is essential to the performance of any railway service, it does seem that the railway industry can be properly said to be subject to decreasing costs within the initial stages of the development. Yet the emphasis on decreasing costs in the railway industry in this country has undoubtedly been due to the fact that the railway capacity has been until very recently greatly in excess of our needs. In Europe, where railroad building has never run far ahead of the need for railways, the idea of decreasing cost in the railway industry has not been emphasized.

Similarly, our emphasis on decreasing cost in manufacturing may perhaps be explained by our tendency to build plants in excess of the need for them. During the past seventy-five years there have been but few lines of work in which the plant capacity has not at any one time exceeded the output. This has meant, obviously, that output could be increased at a decreasing cost per unit of output.

Historically, then, the principle of decreasing cost has applied to manufacturing and transportation, and to other similar lines of enterprise in America. Further, it is applicable to the production of any firm that is not producing to capacity, but, of course, this does not mean that the principle of decreasing cost is inherent in a given industry. It only means that until the right size is reached unit costs will decrease.

In conclusion there are two long-run tendencies relative to the unit cost for all goods. First, there is a tendency for unit cost in all lines of industry to increase as a growing population more fully utilizes the limited natural resources. Second, there is a tendency for the unit cost in all lines to fall as improvements in technique cheapen the cost of production. Which tendency will have the upper hand during the next century cannot be foretold.

Constant Cost Goods. — To complete the analysis reference may be made to constant cost goods although this group of goods is of but little importance in our economic system. Goods manufactured by hand fall into this category over short periods of time in which the cost of raw material remains unchanged and in which there are no changes in technique. Cigar making before the recent advent of the machine process was subject to constant cost within certain limits. A firm with an output of 1000 cigars per day did not have a cost per unit essentially different from that which it would have had if it had produced only one-half this many or twice as many per day. But as suggested earlier, there were rather definite limits within which a firm had to confine its operation in order not to incur increasing cost per unit. To have attempted to employ 8000 persons at such work in one establishment would have been perilous. Unit cost would have been far greater in such a plant than in a smaller one because of the inefficiencies that would have crept in. This point, it will be recalled, was discussed in Chapter XVI, "Production Management."

The Supply Curves of Increasing, Decreasing, and Constant Cost Goods. — The supply curves for goods tend to be identical whether the goods are produced at increasing, decreasing, or constant costs. They all slope upward to the right, indicating that if the price should rise, an increasing quantity would be produced and sold, while a reduction in price would result in a falling off in the amount produced and offered for sale. Some writers used to hold that the supply curve for a good produced at decreasing cost sloped downward to the right as does a curve of demand. This, however, is not the case when there are several firms engaged in producing a given good. This would be true under conditions of monopoly, that is, if only one firm is supplying a given article; but under competitive conditions, the supply curve is a typical supply curve. If all of the firms producing automobile tires, for example, would experience a reduction in the cost per unit if they increased their supply, the supply curve for tires would nevertheless slope upward to the right. An increase in the price would call out a larger production, and a decrease in the price would result in a falling off in production. The units produced by the various firms, as they were plotted on a diagram would be arranged so that the low cost firms would appear at the left and the high cost firms at the right. This would indicate that a marked reduction in price would eliminate the firms that have the high costs (the marginal firms), leaving the low cost firms to continue to produce and sell tires at the lower price.

Goods that are produced by different firms at constant cost for varying quantities are also subject to a typical supply curve. An increase in price would call out a larger supply by inducing the more timid producers to enlarge output, and by calling into the business persons who were reluctant to enter it at a lower price. Likewise, a reduction in price would lead to a reduction in the quantity offered for sale.

This analysis really means that, considered as a total industry, any good is produced at increasing cost; that the phenomena of decreasing and constant costs are confined to individual plants.

Some confusion in regard to this has arisen because of the failure to distinguish between a supply curve and a curve of price trends. A supply curve shows the number of units that will be sold, or produced and sold, over a relatively short period of time, as a day, month or year. A curve for a price trend shows the price movement over a period of years, and is thus a very different thing from a supply curve. Such a curve, which would normally be called a secular price curve, would show the past, or the expected, price of a given article or group of articles for a given length of time. It might slope downward to the right, indicating a reduction in price over a period of time. This, however, would not mean that the supply curve for the article in question would have a similar slope. The supply curve, it must be emphasized, has to do with the relation between price and quantity offered for sale over a relatively short period of time. And since, as has been emphasized above, in almost any industry an increase in price will tend to lead to an increase in the amount offered for sale while a decrease in price would have just the opposite effect, the supply curve slopes upward.

The price of many manufactured articles has declined during the past decade. This indicates a downward secular price trend, but during any one year of this time, in perhaps every line of industry, a higher price would have attracted more persons into the industry and thus increased the volume of production, while a decrease in price would have had the opposite effect. This means, to state the matter once more, that the supply curves slope upward to the right.

The Cost of a Single Firm Subject to Decreasing Cost. — The cost curve for any one firm, that is for the time being subject to decreasing cost as output is increased, obviously, slopes downward to the right as does a demand curve. It is interesting to note that in such a case the curve is a curve of *average cost.* Any point on the curve indicates the average cost of producing the number of units indicated by a corresponding point on the base line. In contrast with this, the cost curve for a firm producing at increasing cost slopes upward to the right and indicates at each point the cost for an additional unit — the cost of the marginal unit — not the average cost for a given number of units as in the case of the decreasing cost goods.

In further contrast, the cost curve for a firm that is producing at increasing cost as the supply is increased, indicates the price that must be received if the given quantity is to be produced. If the 900th unit costs 50 cents to produce while any additional output will cost 55 cents per unit (increasing cost), only 900 would be produced if no more than 50 cents per unit can be secured. If, however, 900 units involve an average cost of 60 cents and 1000 units an average cost of 55 cents (decreasing costs) a manufacturer may find it advisable to produce and sell 1000 units at 50 cents with an average loss of 5 cents per unit, rather than produce fewer units at a still higher average cost. This point is the same as that which was made above relative to the price policy of a hotel manager. It was discussed also in Chapters XV and XVI.

Decreasing cost in a single plant, it will be recalled, is due to the fact that the plant is so large that in view of the limited sale for the output it cannot be operated efficiently. In terms of Taylor's table (Chapter XV), such a plant is being operated at some one of the combinations that precede the least cost combination. An additional output will thus cost less per unit than does the present output. But to repeat the earlier analysis, the firm will be concerned with the additional cost necessary for the production of additional output, rather than with total costs. If the additional direct, or prime, or variable costs, whatever we call them, can be met by the value of the additional output, its production will be undertaken. It is thus the line of prime or variable costs per unit, not the line of total costs per unit, that indicates the price that must be met if production is to be carried on by any given firm. This point will be further considered in the following chapter dealing with monopoly price.

The Effect of a Tax. — If the supply curve for a good is a typical supply curve, a unit tax on the producers will tend to reduce supply and thus to increase the price. Due, however, to the fact that the demand curve, slopes downward, the price will normally not rise by the amount of the tax. It is interesting to note that in the case of a typical supply and demand curve the consequences are the same whether a tax is levied upon producers, or sellers, or upon consumers, or buyers. This can be shown by means of a supply and demand curve such as appears below. Assuming the curves D_1 and S_1 to indicate the original supply and demand conditions, price would be set at 30 cents per unit and 20,000 units would be produced and sold. If, now, a tax of 5 cents per unit is levied upon the sellers the supply curve will shift to the left, as is indicated on the diagram, becoming S_2. Twenty thousand units will be produced now only if a price of 35 cents per unit can be secured. This number of units, however, cannot be sold at 35 cents because of the position of the demand line. The new supply line, S_2, crosses the demand line at a point which indicates that the price will be set at 32½ cents per unit and that 17,500 units will be produced and sold. The marginal producers who were responsible for the production of 2500 units are thus crowded out of the market. Likewise, the marginal buyers who had taken 2500 units at 30 cents per unit are eliminated from the market under the new conditions.

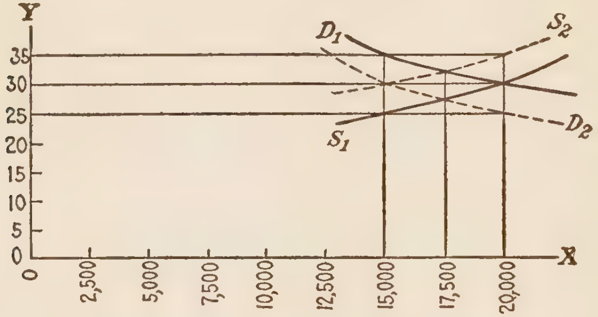

FIG. 14.

Assume, in the second place, that instead of the tax of 5 cents being laid on the sellers, a similar tax per unit is imposed upon purchasers. This will cause the demand curve to move downward and become D_2. Since persons had formerly been willing to buy 20,000 units only at a price of 30 cents per unit, after the tax has been imposed they will be willing to pay only 25 cents per unit for 20,000 units. This quantity, however, will not be produced and sold at a price of 25 cents. The slope of the supply curve means that certain producers will discontinue production rather than produce and sell at this figure. The new demand curve, D_2, crosses the original supply line, S_1, at a point which indicates that the new price will be set at 27½ cents and that 17,500 units will be produced and sold. This means, as did the second supply curve in connection with the former demand curve, that the marginal producers of 2500 units are crowded out of the market and that marginal buyers of this number of units are also eliminated.

In the first case, when the 5 cent tax is levied upon the sellers, the price rises by 2½ cents. Buyers pay 32½ cents for 17,500 units. Sellers pay 5 cents per unit to the government, thus having a net return of 27½ cents per unit. In the second case, when the 5 cent tax is levied on the buyers, the price becomes 27½ cents. Buyers then pay 27½ cents to the producers for 17,500 units and, in addition, a 5 cent tax to the government, making a total outlay to the buyers of 32½ cents. Thus the net result is the same whether the tax is levied upon the sellers or upon the buyers. The total amount paid by the buyers, the net amount received by the sellers, the amount received by the government, and the number of units produced and sold are the same in either case.[1] This analysis is, of course, based on the assumption that the supply and demand forces are in very delicate adjustment to each other. This is seldom if ever the case. Allowance must be made in this analysis, as in most other analyses in economics, for what may be called economic friction. There can be no question, however, that the illustration does indicate a general price tendency which one must appreciate in order to understand the operation of the price-making forces.

If a tax per unit is levied upon the product of a single firm that for the time being is operating under the principle of decreasing cost, such a tax may be paid entirely by the firm in question. For, if the firm attempted to raise the price of its product, and thus recover the tax from the consumer, it would normally discover that not so many units of the product could be sold at the higher price. The falling off in the amount sold, with a consequent reduction in the amount produced, would mean, on the assumption that the plant is subject to decreasing costs for the time being, that the cost per unit of the product would be increased as a result of attempting to raise the price. The firm might well decide under such conditions that it would lose less if it paid the tax than if it should raise the price and thus cut off part of its sales, and as a result raise the average cost of the output which it would then be able to sell.

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[1] Cf. F. Y. Edgeworth, the *Economic Journal.*

If rather than impose a tax on each unit of output, the government should levy a tax upon the excess, the extra large, profits of producers this will tend not to affect the price of the product. Such a tax would tend to fall upon the firms that were well removed from the margin of leaving the industry and thus would not affect the volume of output. To be sure, if the profits in one line of industry should be subject to the tax while the profits in another line of industry were not, this might lead to such a transference of resources and equipment from one industry to another as to reduce the supply in the one line and thus increase the price of the product.

PROBLEMS AND EXERCISES

263. Show just why it is that the price of lead pencils tends to equal the expense required to produce them. Under what conditions might price be above expense for a short time? Could the price of lead pencils be below the expense of production for a long time? Could the price received for railroad service be below the expense of furnishing such service for a long time? Explain. What is a "long time"?

264. How are the wages in the skilled trades kept approximately equal? The earnings of professional men?

265. "The more tires Firestone produces within limits the less each tire costs." Draw a cost curve for tires produced in the Firestone factory. Draw a cost curve for the tire industry. Explain why each curve is as it is.

266. The radio set producing industry is one of the newest and most rapidly growing of our industries. What external and internal economies do you expect will be developed in this industry? Explain.

267. Distinguish between decreasing cost per unit of product because of increasing utilization of plant and decreasing cost per unit of product for other reasons. Are both true cases of decreasing cost?

268. Name two goods that differ greatly in the degree to which the expense of their production is a fixed rather than a variable expense. In the case of which of these will the selling price more nearly correspond at all times to the total expense of production? Why?

269. (*a*) Construct a supply and demand schedule, for, respectively, a good of which a varying number of units can be produced at a uniform cost per unit in each shop; a good of which the cost per unit increases as the amount produced increases over a given period of time; and a good of which the cost per unit decreases in each shop as the volume of output increases within limits. (*b*) Plot the three supply and demand schedules.

270. (*a*) "If a tax of 15 cents a bushel is levied on a producer of potatoes, the producer needs to reimburse himself and therefore raises the price of potatoes." Do you agree with the above statement as to the method by which such a tax will affect price? Explain.

(*b*) In the above quotation substitute for the words "15 cents a bushel" the words "2 per cent on the value of his land." Do you agree with the statement as amended? Explain.

271. Company A can produce 1500 hats annually, costing $3 each.
Company B can produce 1300 hats annually, costing $3.50 each.
Company C can produce 1100 hats annually, costing $4 each.
Company D can produce 900 hats annually, costing $5 each.
Company E can produce 1200 hats annually, costing $6 each.

Use only the data given above; make no additions or other assumptions.

(*a*) Construct the supply schedule for hats.

(*b*) How many units are marginal at $4? What is the potential marginal supply at $4?

(*c*) Plot the supply curve. Then draw an elastic demand curve to set price at $4.

(*d*) How many price limiting factors are now operating? Name them.

(*e*) If price is $4, *name* the companies that will produce hats. State the *total* profit of *each* company that will produce hats at $4.

272. Company F can produce 1000 hats at $3. each.
1500 more “ 3.50 “
1300 “ “ 4 “
900 “ “ 4.50 “

(*a*) Construct the cost schedule for company F's hats. (*b*) Plot the schedule. Draw an inelastic demand curve to set price at $4. (*c*) How much profit is made, if price is $4? (*d*) Is company F operating at increasing or decreasing unit cost? Defend your answer carefully.

273.

Supply	*Price*	*Demand*
28,000	$40	12,500
26,000	38	15,000
23,000	36	17,500
20,000	34	20,000
17,500	32	23,000
15,000	30	27,000
13,500	28	32,000

(*a*) Plot the supply and demand schedule carefully. (*b*) Assume your curves represent a large number of cases (for instance, that there are buyers and sellers at $28.50, $29, $29.50, as well as at $28 and $30). Suppose a tax of $2 per unit is imposed on the sellers. Will all of the tax, only part of the tax, or none of the tax be shifted to the consumers and paid by them? Prove your answer by means of additional supply or demand curves, in connection with part (*a*).

274. Suppose some rare old paintings were being leased to art museums at a rate of $25 per year each. What effect would a tax of $5 per year each, have on the rate charged, assuming the owner to be guided both before and after the tax was levied by his "economic interest"? Explain.

275. "A farmer ships a steer to Chicago. His tax, the tax on the railroad transporting the animal, and of the yards where the animal is sold, go into the price of the animal to the packer. The packer's tax goes into the price of the hide to the New England shoe manufacturer. The manufacturer's tax goes into the price to the wholesaler, and the wholesaler's tax goes into the price to the retailer, who in turns adds his tax in his price to the consumer." President Coolidge, in Lincoln Day Speech, New York, 1924.

(*a*) President Coolidge was arguing in favor of the proposal to reduce the heavy tax rates on personal incomes. Argue that a heavy tax on personal incomes of $20,000 or more would not have the effect that is indicated in the quotation. (*b*) What kind of a tax on a farmer might increase the price of steers? What kind of a tax on packers might increase the price of meat?

276. The two following excerpts are taken from an article by Roger W. Babson, entitled "Taxes Are Paid by the Untaxed," in the *Saturday Evening Post*, Jan. 19, 1924.

"A few weeks ago I had the pleasure of inspecting a factory that makes an automobile accessory widely used on popular-priced cars. . . . The manufacturer pointed out to me after several years of effort he has worked out an improved plan of production . . . this reduces cost say, a fifth. 'I suppose this means a price cut,' I remarked. 'Price cut nothing!' exclaimed the manufacturer. 'Price remains strictly as it is. The whole saving is swallowed up in surtaxes.'"

"The income tax that the farmer pays is added to the price of wheat; the income tax that the miller pays is added to the price of flour; the income tax that the baker pays is added to the price of bread; and the income tax that the storekeeper pays is added to the price of the individual loaf which you buy. Hence, when you buy a loaf of bread the tax of four groups of people is added and a profit on all these groups is added four times in addition. Get me? We not only pay the four taxes for these four groups but we pay a profit of, say, 20 per cent on each of the four sets of taxes."

(*a*) Discuss the first quotation. (*b*) The second one.

CHAPTER XXIII

MONOPOLY PRICE

Monopoly Defined. — Monopoly, as the term is commonly used, means unified or single control of some distinctive good. The word *distinctive* is very important in this definition; every farmer, for example, has control over his own products, but if the corn that one farmer raises cannot be distinguished from the corn which is produced by other farmers, there is no element of monopoly in his control over his portion of the supply. If, however, he produces a distinctive kind of corn, and if he alone produces this kind, he will have a monopoly of it.

This definition also amounts to saying that if an individual or a firm through the control of a special process, trade name, or trade-mark has a product that is clearly distinguishable from other similar products, a condition of monopoly exists. Thus a monopoly condition prevails in the case of Studebaker automobiles, Ivory soap, and Swift's bacon. Such cases of monopolization are, however, of but little importance as compared with those in which one kind of goods, as distinguished from a brand, is monopolized. For example, if a group of persons had a monopoly of oil, or steel, or transportation service this would be of great importance to the general public.

The difference between these two groups of cases of monopoly lies in the difference in the control over price which can be exercised in the one as compared with the other. It is in respect to price that monopoly is significant. In the extreme case, the monopolist by having control over the supply of the good or service in question can, by withholding it from the market, exact an exorbitant price for it, whereas if a person is selling a good or service under competitive conditions, he must take the price that his competitors are willing to take. But as will appear in the following discussion, a monopolist may fall far short of being able to dictate price terms to the buyers.

The Limitations upon Monopoly Price. — As already noted, the power of a monopolist over price, if he has power, lies in his ability to withhold supply from the market. He has no power to control demand except as he may by advertising, or by the use of other arts of salesmanship, augment demand for his product. But a person selling under competition may also influence demand in this way. Thus a monopolist, as a monopolist, does not exercise control over demand. His power over price, if he has any, lies in the fact that as a monopolist he has entire control over the supply of the article monopolized.

The principal limitation upon the power of the monopolist to control the price of his product is found in the elasticity of the demand for the article in question. If the demand is highly elastic then a withholdal of supply will not lead to an appreciable augmentation in price. In general, the greater the elasticity in demand for an article the less will be the effect upon price of any reduction in the supply of it.

As was developed in the chapter, "Demand," the ability to substitute one article for another is of major importance in determining the elasticity of demand. Such substitution on the part of buyers may be phrased as competition on the part of sellers. There is perhaps no case of monopoly to-day in which the buyers are unable to make substitutions, or in other words, there is perhaps no case in which a monopolist is not subject to some competition, using the term in a broad sense. Competition, as defined narrowly, has to do, on the selling side of the market, with the offer of identical goods by different persons. By the definition of monopoly, competition in this narrow sense is excluded from a monopolized good, but when competition is defined more broadly it has a very important bearing on the price of a monopolized article.

(1) *The Competition of Similar Goods.* — In the first place, there is the competition of goods that are somewhat similar to the one controlled by the monopolist. Thus almost any one of the hundreds of manufactured articles that are under the con-

trol of single firms must face keen competition of similar articles. Only one company may make an automobile carrying the name, Buick, but the prices set upon the Buick machines are determined in reference to the prices that are set upon other automobiles. Also, this competition may be potential as well as actual. That is, a firm having a monopoly of some one article may clearly appreciate that if the price is not kept within very reasonable limits, the production of a similar article may be undertaken by some other firm.

(2) *The Competition of Dissimilar Goods.* — In the second place, a monopolist must face competition of dissimilar goods, for all goods compete for the consumer's dollar. If, for example, some one firm should have a monopoly of the clothing business of the country and another firm should have a monopoly of the furniture business, neither would be without competition, for each would compete against the other for that portion of the consumer's expenditure that might be devoted to adding either to his supply of clothing or to his supply of furniture, and also, each one of these two firms would have to meet the competition of all other firms that were selling goods.

In short, the degree to which competition prevails determines the elasticity of the demand for a particular monopolized product. If the competition is very marked, that is, if a similar good can easily be substituted for the one in question, or if the consumer can easily get on without the good, a high degree of elasticity will prevail, and the monopolist will be strictly limited in the price which he can exact above the price that would prevail if the supply of his particular good were not under his exclusive control. It is because of these considerations that governments when they have desired to raise revenue through the instrumentality of monopoly price, have usually chosen for monopolization salt or tobacco, as they are conspicuous in the degree to which the demand for them is inelastic at prices near the cost of production.

(3) *The Possibility of Government Interference* — Another factor that may restrict the monopolist in the setting of high prices on his product is the fear of government interference.

The exorbitant-price monopolist has been the object of public scorn and the subject of government regulation since time immemorial. The modern monopolists, or near monopolists, who are aware of this, tend to follow a conservative price policy.

(4) *The Cost of Production.* — Almost all cases of monopolization that are of economic importance, concern goods that are being produced and whose costs of production are, therefore, important along with the conditions of demand, in the determination of price. There are, however, cases of monopolization in which the monopolist neglects entirely the element of cost, and seeks merely to obtain the largest possible sum of money for the stock which he possesses. While such cases are not of much practical importance, a consideration of the price principle which they involve will assist in an understanding of monopoly price in the case in which cost is also a factor.

Monopoly Price without Reference to Cost. — If a monopolist wishes to secure the largest possible monetary return for the stock which he holds, he must determine the demand for the article in question. Under the conditions assumed in this case, he is not necessarily concerned with selling the entire supply, nor even a large portion of it, but merely with selling that quantity that will yield the largest amount of money. Whether such quantity will correspond to the entire supply, or to part of it only, whether this part will be large or small, will depend entirely upon the demand for the article in question. If the demand is highly elastic — if the demand curve is relatively flat — the largest returns will tend to be secured by selling the entire supply that is possessed. But if the demand is highly inelastic — if the demand curve is relatively steep — money returns will be largest if only a part of the supply is sold. If the demand is relatively inelastic within a certain range, but relatively elastic at both high and low prices, the point of largest returns will tend to be at the upper reaches of the inelastic portion of the demand curve. This situation is illustrated in diagram 15 below. Price in this case, assuming that the monopolist possesses 9000 units, would be fixed at $5, and 6000 of the 9000 units of the supply would be sold. The dependence of price in such a case upon the slope of the demand curve can easily be seen by altering this curve.

With a given demand curve the price point that will yield the maximum returns for a given stock can be located upon a diagram by constructing the largest possible rectangle within the diagram. The point at which the upper right corner of such a rectangle touches the demand curve will indicate the price in question. If the demand curve happens to describe a hyperbola within a certain range then any one price will give total returns equal to those given at any other price within this range. Such a case is perhaps very unusual.

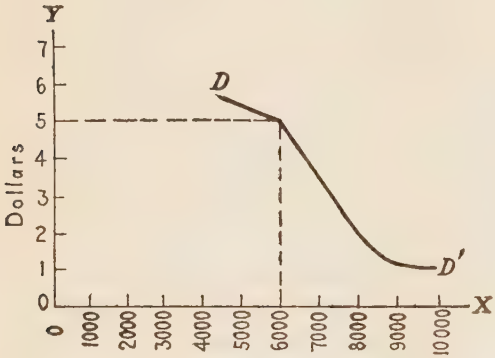

Fig. 15.

The above analysis has tacitly assumed the destruction of that portion of the supply the sale of which would reduce the total money receipts. Such destruction of supply seldom takes place in our economic society to-day, although it is often charged that this is done. The price principle which is involved frequently leads to the storage of part of the supply until later, or in the case of goods that are being produced, it normally leads to a withholding of a sufficient volume of production to permit the monopolist to make the largest possible profit.

Monopoly Price of Goods Subject to Cost. — The significant cases of monopoly price concern goods that are being produced, and which consequently have their prices set in reference to the cost of production. There are some cases of a monopoly of products whose supply is narrowly limited by "natural" conditions. Such is the case of the diamond industry in South Africa. The inelasticity of the demand for diamonds warrants the producers in keeping the output far below what it might be.

If in addition to an inelastic demand, the supply of a monopolized good is subject to increasing cost as the quantity produced is increased, there is an added reason for a sharp restriction in output.

Most cases of monopolization are found within the class of manufactured goods. Indeed, as almost every manufactured article may be distinguished from other similar articles by a patent process or by a trade name, the extent of monopolization is almost identical with that of manufacturing. Practically, however, the situation in general is one of competition, as was suggested earlier in this chapter and as will be emphasized shortly.

Since manufactured goods are subject to decreasing cost in individual plants as the output increases within certain limits, the price problem of the monopolist in such a case is markedly different from what it would be in the case of a good produced at increasing cost. If his product is subject to decreasing cost, a monopolist is confronted not only with the fact that demand is always somewhat elastic and may be very elastic for his particular good, but also by the fact that as supply is restricted with a view to securing a high price, if the demand will permit that, his cost per unit will increase.

Usually, however, the possibility of substitution is such that the demand for any one manufactured article tends to fall off rapidly at a price that is to any appreciable degree above the price set for somewhat similar articles. In other words, the demand tends to be highly elastic at prices above the prevailing prices for similar goods; and thus the monopolist is definitely limited in the prices that he may charge. But by persistent advertising, a producer may create such a strong desire for his particular product that he will be able to maintain a price above that charged for similar articles.

Diagram 16 represents the price-making forces of such a good as is now being considered; namely, a monopolized good, subject within limits to decreasing cost to the monopolist. The degree of the slope of each of the two curves tends to be different, of course, for different goods. The cost curve is not necessarily above the demand curve at any point, as it is in the upper portion of this diagram. All that can be said regarding the curves for a good of this class is that in any case both curves slope downward to the right, and that the demand curve must be above the cost curve, or at least not below it, if the firm producing the good is going to receive returns equal to, or in excess of, the cost incurred.

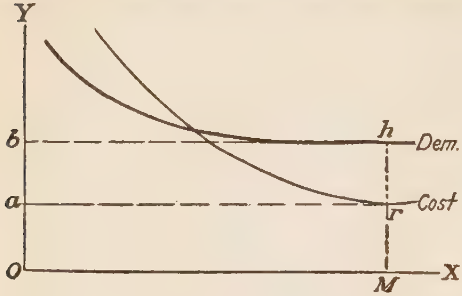

Fig. 16.

This cost line, as explained in the preceding chapter, is a curve of the average cost per unit for all of the units of successive quantities. Profit per unit for any output is accordingly measured by the distance of the demand curve above the cost curve at the point corresponding to that quantity of output. The total profit to be derived from any given output can be indicated by a rectangle drawn against OY with the right side measured between the demand curve and the cost curve. Thus the price at which a producer will seek to sell such a good will be indicated by the point at which the upper right corner of the largest possible rectangle constructed between the cost curve and the demand curve, as just described, touches the demand curve. Such a rectangle is indicated on the above diagram.

Public Utility Rates. — As was mentioned in the second chapter, many of the economic goods or services that are vital to the general public are supplied by monopolies. This is almost invariably true of street cars and telephone service, and gas, electricity, and water in all of the larger towns and cities. These goods and services are commonly spoken of as public utilities. The utilities furnished by the goods and services mentioned are not, however, any more vital to the general public than the utilities furnished by the grocery stores, coal companies, clothing firms, or milk distributors, and, as well, many other business enterprises. The difference between the two groups is that the one is normally supplied by monopolies, while the other is supplied by competitors. Hence, competition is usually effective in keeping prices fair and reasonable in the case of the second group of goods. A vender of potatoes, for example, cannot usually charge more than a fair price for his wares. The competition of the various other sellers of potatoes and the potential competition of persons who are not now in the potato business, but who would be attracted to it if the price were higher, lead almost inevitably to a reasonable price.

The monopolization of the goods and services known as public utilities removes competition as a factor in the determination of the prices or rates that are to be charged for them. These monopolies, too, in setting the prices for these goods and services would be but little limited by the nature of the demand for them. The demand curves for them are highly inelastic at the prices that are generally taken to be reasonable. If the rates charged for water, gas, electricity, or telephone or street car service in almost any city were increased by 25 per cent, or by 50 per cent, the amount sold would perhaps decrease but little. Substitutes for these articles are not available, and, at present, the prices paid for them do not bulk large in the budget of the ordinary family. If, then, these rates are to be reasonable, they must be regulated by public authority. It is this that leads to their being called public utilities. They are not regulated because they are public utilities: they are public utilities because they must be regulated. The need for regulation is the primary fact. Railroads, too, are public utilities for a similar reason, and, likewise, the newly developed super-power plants. There is only one alternative to regulation in the case of these enterprises; namely, government ownership and operation, which may be called an extreme form of regulation.

The rates charged by the monopolies that furnish the goods and services under consideration are in most political jurisdictions prescribed from time to time by some form of public utility commission. The rates are usually set so as to permit a company to earn a fair return on a valuation that is deemed to be reasonable. This valuation is usually determined on the basis of cost. Indeed, if the public is to continue to be served by private enterprises in these fields it is obviously necessary that the persons furnishing the services shall be permitted to recover their cost, plus a reasonable profit. If this is not done, the companies cannot continue to serve the public and to make improvements and extensions as they are needed.

In the determination of value for rate-making purposes many interesting questions arise. Such valuation, as just indicated, is usually based upon cost, but cost is not a word that is easily defined. Should a company be permitted to take as its valuation the cost which was incurred in producing the equipment which it uses, or should the cost that would be involved in reproducing this equipment at the present time be taken? Further, whichever of these two methods is used, cost of production or cost of reproduction, what allowance shall be made for depreciation of the plant? That is, what allowance shall be made for the fact that the equipment has been in part used up already and presumably paid for in part out of the money that has already been collected from consumers? As another alternative, rather than look to the cost that was actually incurred would it be more fair and reasonable to determine the cost that would have been incurred if one had purchased land and equipment prudently? Suppose, for example, that a company should pay exorbitant prices for land and equipment. Should it be permitted to charge rates high enough to earn a reasonable return upon this amount? Or should it be restricted to rates sufficient to yield a reasonable return on the amount that a prudent investor would have paid for the land and equipment in question?

The problem of valuation in public utilities and the determination of fair charges will be discussed further in a later chapter. The principal point to be made at this place is that there is imperative need for the regulation of these charges because of the monopolistic nature of the enterprises that furnish the goods and services in question together with the fact that the monopolists would be able to charge unreasonable prices because of the nature of the demand for their products.

The Effect of a Tax. — (1) *Unit Tax.* — What will be the effect upon price, if a tax per unit of output is imposed upon a monopolist who is producing a good whose cost varies inversely with output? Certainly such a tax would not increase the demand for the article, nor would it reduce the producer's cost and lead to an increase in the supply. That is, such a tax could not lower the price of the commodity. It might, however, not increase the price of the good as the producer might choose to bear the tax himself. For, as noted in the preceding chapter, an increase in price would reduce the demand, and this, by forcing a reduction in the output, would increase the cost per unit, and thus, perhaps, leave the producer with smaller profits than he would have if he should pay the tax.

If the products of firms that are producing substitute articles are also taxed, and if some of the weak firms are forced out of business, the monopolist in question might be able to raise his price to cover some or all of the tax. Or, if the tax did not curtail production as compared with the former output, yet it might prevent an increase in output as demand increases. The price of the article in question would thus be kept at a point above that which would otherwise prevail.

(2) *A Tax on Profit* — If a tax is levied upon the profits of a monopolist, the price of his product will normally not be affected, immediately, at least. For, since he has adjusted his supply so as to get the largest possible profit, any fractional reduction in profit will leave him a larger sum than he would have left if he produced and sold any other quantity. Clearly, nine-tenths of the largest possible profit, assuming that one-tenth of any profit realized is taken in taxation, exceeds nine-tenths of any smaller sum. But over a period of time a tax on profits may prevent a business from growing as it otherwise would grow. In such a case, the volume of output would not increase as it would if the tax were not imposed, and thus, eventually, the price of the product would be higher than it would have been if the tax had not been levied.

The incidence of the tax upon monopoly profits which has just been described does not differ from the incidence of such a tax upon competitors. Competitors, as well as monopolists, seek to get the largest possible net returns. Accordingly, a percentage tax upon their profits would not lead to any adjustment of supply with a view to altering the price in order to escape the tax burden. And, too, the long-time effect of such a tax upon competitors would be identical with the effect upon monopolists. A unit tax levied upon competitive industry would likewise tend to have a similar effect to that of a unit tax upon a monopoly, if the industries being compared are subject to the same conditions of cost as supply is increased.

Indeed, as already developed, the difference between competitive industry and monopolized industry may be very indistinct. The monopolist cannot escape competition. However, it may be so far removed from him that he may extort a large profit as a result of his monopoly; but it may press upon him so closely that his returns will not be sufficient to keep him out of bankruptcy.

The "Law" of Monopoly Price. — There are two additional points that should be mentioned by way of showing the relation between monopoly price and competitive price. These are both by way of correcting statements that give an incorrect impression of monopoly price as contrasted with competitive price. First, many authorities say that the law of monopoly price is that the monopolist sets a price that will yield him the largest net profit. This is, indeed, true of monopoly price, but it is equally true of prices that are set by competitors. Any merchant, for example, however keen may be the competition that he faces, tends to set prices on his goods that will yield him the largest possible net profit. He may be forced to follow the lead of his competitors in setting his prices, but monopolists, too, must set prices in view of what they can get.

To be sure, in the extreme case of monopoly price the monopolist *sets* a price. He controls the supply and, in view of the demand for his article, sets a price that will bring him the largest net profit; while in the extreme case of competitive selling, a competitor *takes* the price at which other persons are selling the article in question. The so-called law of monopoly price has validity when such extreme cases are considered. But in much of our competitive selling, the seller *sets* the price as do monopolists in the extreme cases, and in many of our monopolies — monopolies of brands and patent processes — the monopolist *takes* the price that the competitive sellers of similar goods are getting. Thus the "law" of monopoly price should be restricted to the extreme case of monopolization in contrast to the extreme condition of competitive selling.

Class-price. — The second point to which reference was made above has to do with what is called class-price. By class-price is meant the phenomena which were discussed in a preceding chapter under the heading "Dividing Up the Demand Schedule." Many manufacturers, for example, sell similar articles at different prices, and at times one firm will sell identical articles under different names at markedly different prices. A certain manufacturer of farm machinery, for example, is said to produce one grade of a certain article, but by using three different colors of paint and different trade names he is able to sell his output as of three different grades at different prices.

The earlier discussion of class-price need not be further repeated here. The point to be made now has to do with the relation of class-price to monopolization. Many authorities have taken the position that class-price is a feature of monopoly. This position is not sound. Competitors as well as monopolists sort out their buyers whenever they can. The manufacturer of farm machinery referred to above sells in a keenly competitive market but utilizes the principle of class-price. It may, however, be said that he has a monopoly on his "make," and thus that his practice shows the use of class-price by monopolists. Monopolization of that kind, however, is of but little significance. The competitive nature of his business is of much more importance than the monopolization of a trade name. Sellers of such goods are keen competitors as is well indicated by their selling methods. Further, to give another illustration, most large hotels furnish dining service under the class-price principle. Clearly, this practice of the hotels does not depend on monopolization in any way. Hence, class-price is not a feature of monopoly that distinguishes it from competitive enterprise.

PROBLEMS AND EXERCISES

277. "The power of the monopolist resides in his power to limit supply." Is this sound? Discuss.

278. (1) Assume that you control 75 per cent of the output of gas ranges in the United States. Would you have a monopoly? Defend your answer. (2) Assume that you have a 100 per cent monopoly of gas ranges and enumerate and illustrate the several factors that would tend to limit the prices that you would charge for your product.

279. Suppose company X is producing motometers and has no competition. Overhead (or fixed) expense is $3000 per year; operating (or variable) expense is $1 per motometer. (*a*) What is the least price that must normally be set if only 200 motometers are demanded, and if company X is to produce them? (*b*) What price if 1000 motometers are demanded? (*c*) Is this increasing or decreasing unit cost? Why? (*d*) What is the most probable reason for the existence of the condition set forth in your answer to part (*c*)?

280. Alter the demand curve in diagram 15 in such a way that a monopolist of the 9000 units would find it advisable to take a price of $3 per unit. Explain.

281. (1) Suppose a monopolized article is produced under conditions of constant cost. What price policy will the monopolist adopt if the demand for the article is (*a*) elastic? (*b*) inelastic? Illustrate by a diagram. (2) How, if at all, will the monopolist's policy differ if he produces under conditions of diminishing cost? Illustrate by a diagram. (3) If at increasing cost? Illustrate by a diagram.

282. What would tend to be the effect upon price of an increase in the tariff rate on importations into the country in the case of a good for which the demand is very inelastic? Elastic? Illustrate both cases by diagrams.

283. Can a monopolist under certain conditions get more money for a stock of goods than the identical stock would bring in the hands of competitors? Under all conditions? Explain and illustrate.

284. "The Dutch East India Company used to destroy part of its spice crop to enhance its profits." What conditions were essential to make this policy a good one for the company? Illustrate with a diagram.

285. Given the following conditions of demand and supply:

Price ¢	*Quantity Demanded*	*Expense of Production*
1	1,000,000	$10,000, plus 2¢ for each unit produced.
2	900,000	
3	800,000	
4	700,000	
5	600,000	
6	500,000	
7	400,000	
8	300,000	
9	200,000	
10	100,000	

(*a*) Draw up a cost schedule for a monopolist. (*b*) What price would yield maximum profits to a monopolist? Illustrate by a diagram. (*c*) What would be the effect of a $\frac{1}{2}$ cent tax per unit? Show by diagram. (*d*) What would be the effect of a 2 per cent tax on net profit? Why?

286. When the U. S. Steel Corporation was fully organized, many independent producers of steel desired the trust to join with them in raising the price of steel products. The authorities of the trust, however, refused, thinking it expedient to maintain the old level. How do you suppose they defended their position? (Taylor.)

287. In what ways, if at all, is monopoly price affected by: (*a*) the cost of production per unit, (*b*) potential competition, (*c*) an elastic demand for the product, (*d*) the existence of satisfactory substitutes for the product, (*e*) hostile public opinion?

CHAPTER XXIV

THE INTERDEPENDENCE OF PRICES

The Interdependence of Prices. — In the first chapter that deals with price, the point was emphasized that all the prices that prevail in our economic society are interdependent. Each price is an integral part of the entire system of prices. Our prices are not, however, definitely fixed into an unchanging system of prices. Change is ever taking place: price relationships are always in the process of adjustment. The price relationships that tend to be established are never realized.

While all prices are mutually dependent upon each other, there are certain cases which especially deserve emphasis because of the very close dependence upon each other of the prices involved. There are two classes of such cases that are due to conditions of demand. These are, first, cases of alternate demand and, second, cases of joint demand. There are two similar classes of cases in which prices depend upon each other very closely because of the conditions governing the supply of goods; namely, cases of the production of alternate products and cases of goods that are produced jointly. These four cases will be considered in order.

Alternate Demand. — There are many cases in which goods may be so easily substituted for each other, in part at least, that any change in the price of one will alter the demand for the good or goods that may be substituted for it, with a consequent alteration in price. Thus, if the price of building brick should rise, the demand for lumber and stone for building purposes would be increased. The immediate effect of this change in demand would be, obviously, to raise the prices of these materials. Eventually, the effect of the increased demand for them upon their prices would depend upon whether an extension of production would increase or decrease the unit cost of supplying them.

Similarly, any change in the price of cotton, wool, linen, or silk would tend to alter the prices of the others. Likewise, the prices of the various kinds of fuel, food, entertainment, and labor service are closely related because of the ease by which part of the demand for any one of such articles or services can be diverted to any other. In other words, the demand for any one of such articles or services is highly elastic because of the possibility of substituting another.

Although the substitution of dissimilar goods for each other is not marked enough to cause the prices of any two such goods to be closely dependent upon each other, yet such substitution is an important factor in the interrelation of prices. Substitutions may cover any conceivable range of wants, as has been noted in preceding chapters. Automobiles may be substituted for house accommodation, books for fine clothing, golf clubs for garden tools, or food for musical instruments. Indeed, the rise in the price of any article or service may be expected to cause some of the customary buyers to shift part of their spending money into other lines. If this should not be done — if the same quantity of the article should be sold at the higher price — then some of the customary spending in other lines, or some of the customary saving (investing) would have to be curtailed. Similarly, a fall in the price of any article will tend to release the buying power of some persons for other goods, and attract the buying power of other persons away from customary purchases, including forms of investment goods. In short, the fundamental fact that the buying power of individuals is a definite sum at any one time, makes the demand schedules for all goods dependent upon each other.

Joint Demand. — There are many cases in which conditions just opposite to that of substitution prevail in the demand for two or more articles. That is, the demand for one article may carry with it the demand for one or more other commodities. Thus, the demand for automobiles has increased the demand for all sorts of automobile accessories, for camp outfits and for country hotels. The demand for houses and furniture, for machines and oil, are likewise cases of joint demand. In fact, the demand for a complete article, as an automobile or a furnished home, necessitates a demand for all of the things that are essential to it. Joint demand is thus a prominent characteristic of modern economic life because of the complex nature of virtually every article of commerce.

The prices of two or more goods for which there is a joint demand do not necessarily move together, although they are dependent upon each other. An increase in the demand for one such article over a short period of time tends to result in an increase in its price and in the prices of the other goods that are jointly demanded with it. The long-time effect of such an increased demand upon the price of any of the goods involved will obviously depend upon whether the production of an increased volume of goods will result in an increase or a decrease in the cost of production per unit. But in any event, the prices of such goods are closely related to each other.

The point that was developed above relative to the substitution of one good for another with the consequent relation between prices is also applicable to an entire group of goods subject to a joint demand in their relation to another good or group of goods. Thus, the demand for an automobile and for all the many things that go with it has had a most appreciable effect in lessening the demand for goods which, if it were not for the automobile, would be purchased instead. This, again, testifies to the interdependence of prices.

The Supply of Alternate Products. — On the supply side of the market we have conditions that are comparable to those which have been discussed as applying to the demand for goods. In the first place, we may note, as has been emphasized in the preceding chapter, that many producers may turn easily from the production of one kind of good to another. Thus it may be a matter of indifference to a farmer whether he produces one of a half dozen or more crops, or whether he raises hogs, sheep, or cattle. The line of production to which he will devote himself will thus depend very largely upon the prices to be received for the different commodities. If the price of oats should fall relatively to the price of wheat, farmers would tend to cease the production of the one and turn to the other. This ability on the part of many farmers to produce any one of many different commodities thus leads to the maintenance of certain price relationships among such commodities.

Similarly, almost every producer can shift from one line of production to another. Manufacturers, for example, can usually give up rather easily the production of one commodity and either devote themselves exclusively to other goods they have been producing, or take up the production of one or more new goods. Thus the price of any one of such goods cannot get greatly out of line from the prices of the others. Likewise, in the matter of labor service, the ability of most persons to turn from one line of labor to another keeps the prices for the different kinds of personal service substantially equal within the different labor groups.

There are a few cases in which the equipment of a producer is so very highly specialized that it is impossible for him to cease the production at which he is engaged without losing the value of his equipment. But even the fact of such highly specialized equipment does not prevent the maintenance of a given relationship between the price of such a service and other prices. If such an industry becomes relatively unprofitable as compared with other lines of work — if the price received falls relatively to other prices — business men will cease to construct new equipment of this sort and thus the value of the service offered by the existing equipment may be raised as compared with what it would otherwise have been. This, however, may not take place, but even so the equipment will finally wear out and the line of production will be abandoned because of the low price that prevails.

In short, then, the ability of producers to turn from one line of production to another tends toward the maintenance of certain relations among the prices of the various commodities. This, it will be noted, is very similar to the ability of buyers to shift their purchases from one line to another. Thus, on both sides of the market the principle of substitution makes prices closely dependent on each other.

Opportunity Cost. — The above description has run in terms of producers substituting one product for another. This might have been described as the insistence by producers that they shall get in any one line of production at least the equivalent of that which they have an opportunity to get in some other line. The term *opportunity cost* is often used to describe such a situation. Thus, in the matter of labor service, if one manufacturer is to employ a certain class of labor, the price he will have to pay will depend upon the opportunity which these laborers have to earn wages by working elsewhere. There are certain individuals who would find it difficult or impossible to change from the work which they are doing and enter another occupation, but within any one labor group there are persons who can shift to another calling if the opportunity presents itself. Such persons must thus be paid wages comparable to wages which they might receive elsewhere, and as a result the other persons in their labor group will receive similar wages.

Likewise, in the matter of supplying money funds. Producers for one line of production must pay to lenders a rate of interest comparable to that which they might secure elsewhere. Again, in the utilization of land, if it is to be used for one purpose, the price paid for it must be at least equal to the returns which may be secured by some other utilization. That is, competition on the part of different producers tends to bring it about that all producers have to pay similar prices for the productive agents which they use and consequently the prices of their products are closely related.

It may be that in the matter of furnishing labor service and money funds there is an element other than opportunity cost involved. That is, in the matter of labor, entirely apart from what may be earned elsewhere, one may insist upon having a given wage if he is to work rather than take his ease. And in the furnishing of money funds, individuals may insist upon having a given rate of interest as a price for their refraining from spending the money for consumption goods. But even if such a factor, which may be described as a *disutility cost*, does help to determine the prices of labor service and of money funds, yet this in no way alters the competition among the purchasers of these services. This competition, to repeat, operates to secure and maintain a certain relationship among the prices of the products of the various producers using such agencies.

The Joint Supply of Products. — In the production of certain articles, the supply of one follows as a natural consequence of the production of the other. Perhaps the most clear-cut illustration of this is found in the production of cotton fiber, or lint, and cotton seed. Neither the one nor the other can be produced alone. Until the final separation of the lint from the seed, they must both be considered as one article, and after the separation each exists at once as a finished economic good. Countless other illustrations of joint production might be given. Usually in cases of joint production, the articles of minor importance are described as by-products. In the meat-packing industry, there is a very large number of by-products that might properly be considered along with meat as joint products. The marked difference between such a case and that of cotton already referred to is that each of the products in the meat-packing industry requires a special kind of production in order to carry it to completion. That is, within the later stages of their production these articles become specialized products.

The prices of joint products are, obviously, closely related to each other. If the price of meat should either rise or fall appreciably we should expect that the prices of many other products of the packing houses would also be altered. Similarly, of course, the prices of cotton fiber and cotton seed are mutually dependent. If there should be an increased demand for cotton seed, this would tend to raise the price paid for this article. This would not have any immediate effect upon the price of the cotton fiber, since neither the demand nor the supply of cotton fiber would have been altered thereby. But with the price of cotton fiber no lower than it was before, the profit from the production of cotton would be increased, as a result of the advance in the price of cotton seed. This would lead to an increased production of cotton in order to secure the increased profits that could then be realized. This increased supply of cotton would tend to depress the price of cotton fiber and would also, of course, operate to make the price of cotton seed less than it would otherwise have been. Similarly, any increase in the price of one of two or more goods that are produced jointly, will tend to depress the price of the other, or others, due to the augmentation of supply in order to enjoy the increased profits that are made possible because of the increased price of the one. This analysis also applies to the price of goods the production of which tends either to increase or decrease as the output of other goods is altered. For example, the increased production of cotton which has just been instanced would obviously tend to decrease the supply of certain other commodities as compared with what it would otherwise have been.

The determination of the price of each of two or more articles that are produced jointly is an interesting problem. First, the prices of the joint products taken together tend to equal the combined cost of their production to the marginal producer. If the prices together are less than the combined cost, in the case of a given group of goods, marginal producers tend to discontinue such production and the prices of the joint products tend to rise. Another producer would then become the marginal one. Or, if the prices of the different joint cost products were more than the combined costs to marginal producers, additional producers would tend to begin the production of such goods, thus increasing the supply and reducing the price. This is the familiar cost principle of pricing that has been so frequently emphasized in the preceding pages.

But, second, there is no relation between the price of one article that is produced at joint expense and its cost. This follows necessarily from the fact that the cost of producing one of two or more joint cost articles cannot be determined. The problem is insoluble. In no way can the cost of producing cotton fiber be separated from the cost of producing cotton seed, nor can the cost of producing porterhouse steak be separated from the cost of producing chuck roast. Thus the price of any one of two or more joint supply products cannot be related to *its* cost. The price of such a product is determined by the demand for it in view of the supply of it. T-bone steak, round steak, rump roast, bones, — the various parts of a slaughtered steer, all sell at different prices per pound, because the demand for any one in relation to its supply is different from the demand for any other in relation to its supply.

But, to say that the price of a joint cost good is what it is because of the demand and supply relationship is not to say anything distinctive about it. This is true of any price, without exception. The difference in the pricing of a joint cost good as compared with other goods of which the physical supply is variable is that the supply of a good that is produced alone tends to be of such volume that price equals cost, while in the case of a joint cost good, supply cannot be adjusted so that price will equal cost, because cost cannot be determined.

If, however, additional expense must be incurred in order to complete the production of an article that is partially produced at joint cost with one or more other articles, the price tends to equal, at least, the extra expense involved. Thus the bristles from hogs that are prepared to be used as brush fiber tend to sell for at least enough to meet the expense of preparing them for such use after they are removed from the animal. In this stage of their preparation, bristles constitute a separate product. This extra or separate expense tends to equal the minimum price that is set on such an article. In addition to this, the seller gets as much more as the demand and supply relationship will permit. On some of the by-products, price may barely equal the separate expense involved, while in the case of others, price may be much above the separate expense. Price must, of course, be above the separate expense in the case of some of the articles if the combined prices of all of the products that are in part produced jointly and then carried through separate processes are to be equal to the total expenses involved in their production. And, as explained above, this is what tends to happen. That is, the price-making forces tend to bring it about that the combined prices of joint supply products are equal to their total cost.

Wool and Mutton. — The production of wool and mutton is an interesting case of joint production. The production of either one involves the production of the other, but within limits, each may be substituted for the other. In Australia and New Zealand, in the early days, the inability to ship meat to the European market led to the growing of sheep almost exclusively for the wool which they produced. In the eighties, through the development of the process of refrigeration on ocean transports, it became possible to send fresh meats from Australia and New Zealand to the European countries. This at once increased the price of mutton in Australia and thus sheep came to be valued for their flesh as well as for the wool which they produced. Accordingly, in the breeding of sheep increased attention was given to the producing of mutton as compared with wool. In other words, to some extent, the production of mutton was substituted for the production of wool.[1]

In the case of sheep, it is interesting to note the difference between the short time and the long time effects of price changes of mutton and wool. An increase in the price paid for mutton would tend to bring about the slaughtering of sheep and would thus augment the supply of wool, thus depressing its price.

But since this would mean the reduction of the supply of wool in later seasons the increase in the price of mutton would have caused an increase in the price of wool. However, should the increased demand for mutton continue over a period of time sufficiently long to allow the breeding of a new supply of sheep, the supply of wool would be increased as compared with the former supply and the price of wool would consequently be lower than it otherwise would have been, due to the increased demand for mutton.

Arbitrage. — The prices of similar products in different localities or districts are closely related to each other through the operation of what is known as arbitrage. Professional traders engage in the task of buying in the localities where the price of a given commodity is low and selling it in another locality where the price is relatively high. The keen competition which obtains among such traders tends to bring the prices that prevail in different localities into such a relationship with each other that the price differences will not be greater than the cost involved in trading in the commodity and in transporting it from the region of low prices to the region of high prices. This function of traders really brings it about that the width of the market for almost any article is as extensive as the civilized world.

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[1] H. D. Henderson, *Supply and Demand*, 1922, p. 67.

Speculation. — Arbitrage, which has just been described, tends to establish a close relationship between the prices in different districts. Speculation tends to establish a similar relationship between the price of a product at one time and its price at a future time. Speculation, broadly defined, means the purchase of a commodity which is to be sold or utilized at a later time, or the selling of a commodity which is not to be procured until some time in the future. Thus, all business men who buy stock for later use or for sale are speculators. Business men watch the trend of the market very closely and if it appears to them that the price of the commodity in which they deal or which they use in their business is to advance in price later, they will increase their customary purchases immediately or, if they are sellers, they will tend to hold back on the selling of the commodity in question. Such actions on the part of the business man will tend to raise the price of such a commodity at once, and as a result the consumption of it will be somewhat curtailed, or, in other words, the supply will be conserved. As a result, when the time is reached at which the price would otherwise have risen to a certain figure, the supply will be larger than it would have been if the business men had not acted as indicated, and accordingly the price will not rise as high as it would have risen.

Similarly, if such persons should feel that the price of the commodity in which they are interested is to fall, they will curtail the present purchases so far as possible, and if they are sellers, they will increase their efforts to dispose of the product and will tend to reduce their prices in order to accomplish this. As a result, the consumption of such a commodity will be increased, and when the time is approached at which the price would otherwise have fallen to a certain point this stimulation of consumption will have so reduced supply that the price will be higher than it otherwise would have been. That is to say, the speculation which has just been described tends to make the price of a commodity much more uniform over a long period of time than it could possibly be if men did not buy and sell in view of the conditions which they anticipate are to be manifest in the future.

In addition to the speculation which has been discussed, there is, in the case of certain commodities, speculation of a somewhat different, though similar character. This speculation takes place on what is known as the organized exchanges that deal in wheat, wool, cotton, sugar, and a few other leading commodities. These exchanges were discussed earlier in relation to their utilization by business men when they wish to protect themselves against a decline in the price of a commodity. The present problem has to do with the effect of such exchanges on the prices of the goods dealt in. The persons who devote themselves to this speculation are for the most part what may be called professional traders. They are not engaged in business of another sort as are the men whose operation has just been described and as are the persons referred to in the previous discussion of these exchanges. They devote themselves merely to buying and selling.

In the language of the market, the dealers who sell in anticipation of a fall in price are called "bears" — they bear the price down. And the dealers who buy in anticipation of a rise in price are called "bulls." Buying and selling take place among these professional traders because of differences in judgment as to the course of prices. At any one price, some of the speculators will normally believe that price will rise while others will believe that it is going to fall, or, at least, some will believe that the price will not rise as much or fall as much as the other speculators believe that it will. It is differences in judgment that make such a market, as Mark Twain observed in regard to horse races. Thus one cannot properly speak of the professional speculators' buying at one time and selling at another. When some of them buy, others sell. The trading is largely within the group.

But if the crop reports for, say, the 10th of July, indicate that conditions are more unfavorable than they have been for a good yield of corn, speculators as a group will be more anxious than they have been to buy corn to be delivered later. Those most anxious to buy will offer a slightly higher price than has prevailed before. If there is but little offered for sale at that price, dealers that are most "bullish" may offer a still higher price. In this way, the price of corn for delivery, say, three months hence will rise. The price of corn to be delivered at once, "spot" or "cash" corn, will also rise. This will take place because the rise in the price of corn to be delivered later will increase the profit to be made in holding corn in storage at the old price. Competition will tend to eliminate this additional profit by forcing up the price of "spot" corn. The rise in the price of "spot" corn will tend to reduce the current consumption of corn — the supply of corn during the coming months will be larger than it would otherwise have been — hence, price in the later months will not be as high (if the crop is less than normal) as it would have been if the speculators had not bid up the price long before the crop was ready for sale.

Likewise, indications that the price of corn will be very low six months or a year hence on account of a large crop, will tend to cause the price of "spot" corn to fall — consumption will be increased — and thus (if the crop is unusually large) the price will not fall as low as it would have fallen if the price decrease had not been anticipated. Whereas, we may assume, the price would have been very low in October, at harvest time, the trading on the market makes it low for a long time before the harvest, but prevents it from being as low at harvest time as it otherwise would have been. In short, the anticipation of a rise or a fall in a price sets forces in motion that make the rise or the fall less than it otherwise would have been. Speculation tends to smooth out the price curve.

The following data relative to the price of wheat for two ten-year periods show that for these periods the average price of wheat was practically uniform from one season to another.

TABLE 11

THE AVERAGE PRICE OF WHEAT BY MONTHS

Month	*The Price of Wheat*[1]	
	1 *(1901–1910)*	2 *(1910–1919)*
July	93.1c	$1.27.8
August	92.1c	1.28.9
September	92.7c	1.28.4
October	92.3c	1.28
November	91.1c	1.31.1
December	93.3c	1.30.2
January	91.2c	1.20.5
February	93.5c	1.26.4
March	92.8c	1.25.6
April	92.3c	1.27.1
May	95.6c	1.37.2
June	95.7c	1.36.5

[1] Bulletin, Natl. City Bank, Feb. 1921. Column 1 gives the price of wheat at Chicago; column 2, the average farm price of wheat at the first of each month.

These data not only afford verification of the point just discussed that speculation tends to equalize prices throughout different seasons, but they also show that the wheat speculators do not, as is so often said, depress the price at harvest time and raise it later after the farmers have sold their crops.

PROBLEMS AND EXERCISES

288. Illustrate alternate demand or joint demand by reference to each of the following goods: Fords, golf sticks, the *Saturday Evening Post*, Gillette safety razors, silk, hogs, breakfast cereals.

289. (*a*) What relation does opportunity cost bear to the question of the supply of alternate products?

(*b*) Assume that you are undecided as to whether to prepare to practice law, medicine, or dentistry. Show how your decision rests in part at least upon the question of opportunity costs.

290. Account for the use of the expression "in part at least" in the preceding problem.

291. (1) What determines the price of (*a*) a group of three joint products? (*b*) the principal product of the group? (*c*) the by-products?

(2) How, if at all, would extensive advertising of the by-products affect the price of the principal product, (*a*) if competition prevails? (*b*) if the production is monopolized?

292. Suppose an increase in the demand for beef hides. In what direction would this tend to affect the long run price of (*a*) beef hides? (*b*) the best cuts of beef? (*c*) the poorer cuts of beef? (*d*) mutton? (*e*) bone fertilizer?

293. (*a*) If a large part of the people who now make beef and pork a part of their diet should permanently discontinue the use of these foods, what effect would this tend to have on the price of bone fertilizer? Explain fully.

(*b*) This change in the price of bone fertilizer, by affecting the price of the fertilizer which is a by-product of the fish industry, would affect the price of fish in what way?

294. "In a market which is truly single and theoretically perfect any commodity at any one time must be selling at a single price." — Taylor. How does arbitrage affect the truth of this statement?

295. How does speculation differ from hedging? Cite a case in which a miller "hedges" and one in which he speculates.

296. Should you expect the development of cold storage to mitigate or to aggravate fluctuations in the prices of perishable foodstuffs? Why?

297. If a ripening wheat crop should be seriously damaged suddenly, what would wheat speculators do? Would this activity be to the advantage or disadvantage of consumers of flour? Discuss.

298. Taylor says that the chief functions of speculation in produce are: (1) to establish the proper price; (2) to secure the bearing of the risk burden of ownership in the easiest and cheapest way. Show how each of these ends is secured.

CHAPTER XXV

PRICE POLICIES OF SELLERS[1]

We have now considered the general principles by which the prices of commodities and services are determined. The discussion has involved an analysis of supply and demand conditions in the various groups of price cases. In this chapter additional attention will be given to the question of supply. More particularly, we shall consider some of the policies that are followed by merchants and manufacturers in setting the prices at which their goods are offered for sale.

A One-price Policy. — One of the phenomena of modern business is the practice of a single price to be paid by all purchasers, who buy under substantially similar conditions. Almost all retail stores to-day follow this practice. They attach price tags to each article of merchandise and normally do not depart therefrom in selling goods. Similarly, many manufacturers publish the price at which they will sell. The extreme illustration of this practice on the part of manufacturers is found in the cases of nationally advertised brands in which the price figures appear as part of the advertisement.

Such a price policy is in sharp contrast to the old custom of marking goods in a secret code and then setting the price anywhere above cost according to the probable willingness of the customer to pay. Likewise, it is in sharp contrast to the price policy of the usual second-hand store. The one published price need not remain unchanged. A merchant may vary the prices of his goods from time to time, but if for any one day or other period of time he asks the same price from all customers he is adhering to the policy under discussion.

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[1] Chapters XXVIII and XXIX of *Principles of Marketing*, by Maynard, Weidler, and Beckman, have been drawn upon for some of the material for this chapter.

The practice of the published price possesses many advantages. First, it leads to a great saving of time on the part of both the customer and the seller as compared with the other method which tends to lead to prolonged higgling over the price that is to be paid. In addition to this there are several other advantages that apply to sellers. They are not in danger of losing the good will of certain customers through selling to them at prices above those that are charged to others. Further, such a price policy tends to shift emphasis from the question of price to that of quality of the merchandise. Then, too, if salesmen ask any one of several prices, the less efficient salesmen would tend to get only the minimum price, which would obviously be to the disadvantage of the merchant. Finally, in the case of a large retail organization, one published price is perhaps necessary in order to prevent thefts by salesmen in the reports of cash received.

Firms that profess to follow the one price policy sometimes depart from it. In the sale of an automobile, the price may be cut by allowing more for a used car that is traded in than the car is worth. Further, special prices are sometimes made to business associates, and at times in many stores the offer of less than the tag price is accepted if a rather considerable amount of money is involved. But unquestionably, the general rule in retail merchandising is to sell only at a specified price.

Wholesale firms and manufacturers do not practice the one price policy nearly so extensively as do retail merchants. They prefer to have a higgling area in which prices may be raised or lowered depending upon the eagerness of the buyer for the goods in question. They claim an advantage, too, in that they are thus able to quote lower prices to persons of high credit rating than they are willing to quote to persons whose credit is not above reproach. This policy on the part of such sellers undoubtedly gives them difficulty occasionally, when some of their customers learn that sales have been made to other persons at prices below those which they have had to pay.

Price Maintenance. — Somewhat as an extension of the price policy that has just been discussed, many manufacturers seek to have their goods sold to consumers only at a price which they have set. This is especially true of the manufacturers who produce articles that are advertised nationally as selling at a particular price. Such manufacturers insist that if the price is cut by the retailer the confidence of the public is weakened in the quality of the article or in the fairness of the advertised price. Chain stores, variety stores, and mail order houses are the principal source of distress to manufacturers in this respect.

Manufacturers wishing to maintain a certain selling price have tried all sorts of means to prevent price cutting. The Victor Talking Machine Company for a long time disposed of machines and records under what was purported to be a leasing contract and not a contract of sale. The retailer leased the products from the manufacturer and the consumer bought only the lease from the retailer. He did not buy the article. Hence, the manufacturer retained ownership in all machines and records and could take them away from the retailer or the consumers at any time, by compensating them, of course. Thus, if a merchant should sell records or machines below the established prices, his customers might be subjected to the annoyance of having to give up the goods which they had purchased. When, however, the company attempted to recover goods in a case of this sort, action was brought in the courts and it was held that the contract was in effect a sale and not a lease.

Another method of maintaining prices is for the manufacturer to consign the goods to the retailer and retain the title to them. The manufacturer may then reclaim them at any time that he finds that the retailer is selling them below the established price. This method of selling is, however, an expensive one to manufacturers. They prefer to sell to retailers for cash rather than wait for their money until their product is sold to consumers. Then, too, such an agency contract does not prevent the retailers from cutting prices.

Manufacturers are free to sell goods to any retailer. It is in the case of a line of goods which the retailer is very desirous to handle that the possibility that the manufacturer may decline to sell to him again may cause him to refrain from cutting the price which the manufacturer wishes to maintain. In respect to this aspect of the matter, the courts have held that it is illegal for a manufacturer to use a spy system to detect price cutting by retailers, but if he comes upon evidence of price cutting in the natural course of events he is within his rights in refusing to continue to do business with the retailer in question. The courts have also held that it is illegal for the manufacturer to threaten to refuse to sell goods unless the retailer maintains a particular price.

Many arguments have been advanced to the effect that price maintenance by manufacturers is in the general social interest. The leading argument has been that price cutting impairs the prestige of a product and hence disrupts not only the business of manufacturing it, but also the business of wholesalers and others who assist in marketing it. This argument is perhaps of but little validity to-day. The public has become sufficiently accustomed to price cutting of nationally advertised merchandise to know that a cut price is not necessarily indicative of poor quality. Hence price cutting may be expected to interfere but little, if any, with the orderly production and sale of merchandise.

On the other hand price cutting is advantageous to the consuming public, since goods are thereby sold at lower prices than would otherwise be the case. Price cutting may be merely indicative that certain retailers have devised newer and cheaper methods of merchandising. It would seem to be very unfortunate to deny to the consuming public the advantage that would normally tend to flow from such an improvement in merchandising methods.

Local Price Cutting. — In sharp contrast to the policy of price maintenance is the policy of local price cutting by manufacturers. This is a method that has been frequently used by large enterprises to destroy local competitors. At times goods have been almost given away in order to accomplish the end in view. The inevitable result of the practice when it has been pursued relentlessly by the large concern has been either to drive the local concern into bankruptcy or to force it to sell out to the large intruder.

Local price cutting for the purpose of eliminating competition is held to be unfair competition and is prohibited by federal law, through the operation of the Federal Trade Commission. A concern may, however, charge a low price in a given community in order to meet competition. This will be referred to again presently. Local price cutting in the days when it was practiced seemed to be to the immediate advantage of the consuming public; but ultimately, of course, the tendency was for the large concern to secure a monopoly in the local market and then charge a higher price than formerly prevailed. The factors that limit the prices of a monopoly were undoubtedly such in certain cases that after the local competitor had been destroyed the price charged was less than the price that formerly prevailed, but usually price cutting meant that higher prices would prevail eventually.

The Standard Oil Company is conspicuous among the enterprises that resorted to local price cutting in order to destroy local competition. In its early days this was one of the many means by which it extended its power. In December, 1904, for example, the average price which the Standard Oil Company charged for oil in the southern part of California was 7.2 cents per gallon. At the same time it charged 12.4 cents per gallon in the northern part of that state, 15.3 cents per gallon in Oregon, and 15.7 cents in Washington. The oil was all supplied from a single source and according to the report of the commissioner of corporations, the differences in price in these different regions greatly exceeded the possible differences in marketing costs.[1] Among the many other concerns that have resorted to this method of stifling competition may be named the tobacco and powder companies.

Prices and Transportation Charges. — An interesting series of questions arises in relation to price and transportation charges. Most department stores ask the same price for articles whether they are carried away from the store by the customer or delivered to him at the extreme edge of the city. The difference in the net price realized by the dealer is often markedly different in two such cases. Similarly, a manufacturer may charge the same price at the mill as is charged for goods if they are delivered. The difference in the "mill net" to a manufacturer may be very marked in some cases.

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[1] Report of the Commission of Corporations on the Petroleum Industry, Part II (1907), pp. 27–36. Quoted in Marshall, et al., *Materials for Elementary Economics*, 1913, p. 436.

Another practice is to pay the transportation charges if goods are shipped into certain localities and not if they are shipped elsewhere. Wholesale grocery companies located in Columbus, for example, pay transportation charges to Dayton, Ohio, but not to other points in their marketing area. The explanation of this is that similar companies in Cincinnati will also pay freight charges to Dayton, which is about midway between the two cities. Hence, Columbus companies must also pay these charges if they are to meet the competition of the Cincinnati dealers. Likewise, Columbus distributors of hardware and other similar articles frequently pay all the freight charges on goods shipped to Cleveland, and Cleveland firms pay such charges on goods shipped to Columbus,[1] but such companies do not pay freight charges if goods are shipped into other cities. In this way, what amounts to price cutting takes place if goods are to be shipped into a certain territory where competition must be met.

While one concern may thus pay freight charges into a certain territory in order to meet the competition of other concerns, a local company normally has a territorial advantage because of the freight that must be paid from the leading center of manufacture. A meat packing house in Columbus need not charge much less for its product when sold locally than the price of similar products delivered in Columbus from Chicago. Nor need a local flour miller, at almost any point in the country, ask a price that is much below the price of flour in Minneapolis plus the freight charge from that city. That is, if products must be shipped into a given locality from the large producing center, local producers who partially supply the local market may take advantage of the situation. In such a case, the large producers would not pay freight in order to sell into a given locality. That practice is followed only as between two concerns of approximately the same size and is restricted to certain markets. Obviously, the Minneapolis flour companies could not follow the policy of prepaying freight into all localities in the country. They dominate the market and get the price they ask in spite of the competition that they meet in so many local centers.

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[1] T. N. Beckman, *Wholesaling*, 1926, p. 154.

A practice similar to that followed by local millers in setting a price on the local product equivalent to the Minneapolis price plus freight from Minneapolis, was long followed by the United States Steel Corporation. The price quoted in any place in the country was the price at Pittsburgh, the principal manufacturing center of the Steel Corporation, plus the freight from Pittsburgh. A large part of the product of the company was made in its plants at Gary, Indiana, near Chicago, at Birmingham, Alabama, Duluth, and other western points. But regardless of where "U. S." steel was made, it was sold at the Pittsburgh price plus the freight charge from Pittsburgh. Thus, a purchaser of steel in Indianapolis who received a shipment from Gary paid what came to be called "mythical freight" from Pittsburgh. A purchaser in Birmingham of steel manufactured there paid the same price that he would have paid if the company had shipped the steel to him from its Pittsburgh plant. This practice became known as "Pittsburgh plus."

This practice was similar, it should be noted, to that of the local miller who charges a price for his flour equal to the Minneapolis price plus freight from Minneapolis. The purchaser of such flour can also be said to have to pay "mythical freight" from Minneapolis. The Steel Corporation justified its policy on grounds similar to those by which the policy of the local miller can be justified. The plants at Pittsburgh were said to be the dominant ones, and it was claimed that it was necessary to ship steel from Pittsburgh into all centers of the country. Hence, it was necessary to charge "Pittsburgh plus" on such shipments and in order to get such a price on these particular shipments, it was necessary to charge a similar price for all steel sold.

The other steel companies, the so-called independents, followed the United States Steel Corporation in the matter of pricing, just as mills outside of Minneapolis follow the prices of the Minneapolis mills. Indeed, the policy of "follow the leader" prevails in most lines of merchandising where there is a very large firm or a dominant center of production. The independent steel companies thus also sold steel at "Pittsburgh plus."

The practice of "Pittsburgh plus" came to be bitterly opposed by persons in the neighborhood of the Mississippi River and further west. They argued that they were having to pay higher prices for steel than they would have to pay if the "Pittsburgh plus" plan should be abandoned. Action was brought before the Federal Trade Commission and in the summer of 1924, the commission ordered the United States Steel Corporation to cease and desist from the practice of quoting prices "Pittsburgh plus."

Incidentally, it is possible that the abandonment of this plan will be to the advantage of the United States Steel Corporation. Under the other practice the independent companies which are largely centered in the region of Pittsburgh could sell steel in the Birmingham and Chicago areas on a profitable basis, since the price was based on the Pittsburgh price, but with the abandonment of "Pittsburgh plus" the United States Steel Corporation can set prices in the market areas of its various plants that will be profitable for those plants and at the same time below the price at which the independent companies could deliver steel into such territories. If the new plan results in the various plants of the United States Steel producing and selling more steel than they otherwise would even at an average price that is somewhat below the former price, the Unite States Steel Corporation will tend to gain thereby.

Cement companies usually follow a pricing plan that is similar to "Pittsburgh plus." Cement is a very heavy product relatively to its price and thus the market area for any plant is seldom very extensive. The market area usually extends somewhat as a circle around a city in which is located a large mill or a group of mills. In size the market area corresponds somewhat roughly to the size of one of our average sized states. Within this area all cement plants tend to charge the price set by the mills at the market center, plus the freight from that city or minus the freight to it. Mason City, Iowa, is such a market center. Either of the two cement mills of Des Moines, for example, sells cement in Des Moines at the Mason City price plus the freight charge from Mason City to Des Moines. Customers in Des Moines thus pay the so-called "mythical freight" from Mason City to Des Moines on all cement which they use that is manufactured at home. Indeed, wherever these mills sell cement, whether toward Mason City from Des Moines or in the other direction, they charge the Mason City price, plus freight from that city. This policy perhaps arose as did the policy of local flour mills in charging the price of Minneapolis mills plus the freight from there. But the fact that cement mills of great capacity follow the lead of mills in another city suggests that there may be a "gentleman's agreement," expressed or implied, that such a policy shall be followed.

Cement lends itself especially to such a single price policy on the part of all firms because cement is of uniform grade. The product of every mill is meant to be exactly standard cement. Flour, of course, is different from cement in this respect. Brands differ and dealers seek to maximize the difference in favor of their brands. Thus, although local mills would like to set their prices according to the Minneapolis price plus freight from Minneapolis, some may have to charge less than this in order to induce customers to buy their product rather than the nationally advertised brand. But these considerations do not apply in the case of cement. The policy of a company relative to deliveries and collections and the persuasiveness of its salesmen are, of course, factors in the sale of its products. But the fact that cement is cement would make it difficult for two or more companies to charge different prices for cement in any one locality. From the point of view of the customers, if there is to be any competition among companies in a given locality, and that is important in order that good service may be promoted, equal prices on the part of the various companies are important. If prices were unequal, the low price company would tend to destroy the other ones.

One more point should be made relative to prices and freight charges. Automobile companies, for the most part, price their cars at the point of principal manufacture; for example, Detroit, Lansing, etc. In other words, the customer must pay the freight on the machine from the place of principal manufacture to the place where he buys it. Further, this freight is figured on the basis of a car that is assembled and shipped in that form. This practice often operates to give very different "mill nets" to a manufacturer for cars sold in different cities. Cars are usually shipped as parts before they are assembled and thus the actual freight charge to the company is much less than the amount that is added as freight to the price that the customer must pay. And also, certain parts of the car may have been manufactured near the point of assembling and hence will not cost the company anything in the way of freight charges. The net gain to a company from a car that is sold in or near the city where it is priced "f. o. b." may thus be less than the net gain from a similar car which is sold elsewhere.

Guarantee against Price Decline. — Many manufacturers follow the practice of guaranteeing dealers against a decline in the price of the goods purchased. This policy was used rather extensively during the period of 1920 and 1921 when prices were falling. Retail dealers were reluctant to purchase stocks of goods at that time as they feared that subsequent to their purchase and before they had sold the goods, the manufacturers would lower the price and thus force them to suffer a loss on what they had purchased, since other retailers could then buy at the reduced price. Thus it was necessary that the manufacturers guarantee their purchasers against a price decline in order to encourage them to place orders. The plan was thus in the social interest.

Similarly many manufacturers of seasonal goods use this policy to encourage dealers to place orders far ahead of the season concerned. Likewise, the policy is used by some manufacturers in the case of non-seasonal goods. In all cases, the guarantee against price decline encourages dealers to place orders ahead of their needs for goods and thus permits manufacturers to schedule a program of production which will permit continuous operation. This will mean usually that the manufacturers will be able to operate their plants at normal capacity and thus avoid the wastes that accompany an attempt to produce beyond normal capacity or at less than normal capacity.

The scheme has been abused by certain large manufacturers. Through the policy of price guarantees they have encouraged their smaller rivals to do likewise, and then after the smaller concerns have sold heavily, they have cut the price, and thus, by forcing the smaller concerns to do the same, have forced them to make up this difference to the retailers who had purchased from them. This in some cases has forced the smaller concerns into bankruptcy.

Other Features of Price Policies. — The above discussion of certain features of pricing by which sellers decide upon their asked prices, is not meant to be exhaustive. The policy that is followed by various sellers in regard to the addition made to the price that they have paid (the mark-up) is of considerable interest. The question as to odd prices as compared with even prices — 14 cents, $1.98, $4.95, etc., instead of 15 cents, $2, or $5, for example — is also one of significance. Likewise, the problems of cash versus credit, discounts for cash, refunds, and the attention given to the prices of competitors are important. The limitations of space, however, do not permit the discussion of these questions in this book. The reader is referred to books on marketing for a discussion of these problems.

It should also be noted in this connection that the discussion in preceding chapters of the policy of managers in regard to fixed and variable expense is also part of the pricing policy of sellers. All of these factors affect the make-up of the supply schedules for the countless articles that are offered for sale. They are thus important to an understanding of the pricing process.

Price Uniformity. — In the preceding chapters, the point has been emphasized that the competitive forces tend to bring about uniformity in price for similar articles in the hands of different sellers. This principle is of cardinal importance. But certain of the practices noted above amount to a modification of it. While there is a marked tendency toward price uniformity for similar articles, the policies of certain dealers may result in their prices being somewhat out of line with the prices of other dealers.

One must, however, keep in mind that sometimes what is said to be a case of price variation should not be so construed because all other things are not equal. If one merchant, for example, employs courteous sales people, sells goods on credit, delivers them, and permits their return if the customers are not satisfied, while another merchant in the same locality follows an opposite policy in these particulars, the prices of the two merchants should not be compared on the basis of merchandise alone. If the one charges $6 and the other $4.87 for identical articles, it must be remembered that the persons who patronize the one store may consider the extra services which are received as well worth the extra price charged for the merchandise. But if one does look to the merchandise alone, the other factors involved afford an explanation as to why the price in the one store can remain at $6 while the price in the other is only $4.87.

But it is only within certain limits that these non-merchandise factors result in variations in prices quoted for identical articles. Some persons will pay a great deal to trade at an exclusive store and many will pay something for that privilege, but the mass of buyers to whom most merchants look for their patronage regard the merchandise as almost the sole factor in the transaction. In other words, most stores cannot charge very much for "service." This brings us back to the major principle that prices of identical articles in the hands of different sellers tend to be the same.

The Inertia and Ignorance of Buyers. — Another factor of significance in the pricing policy of sellers is the inertia and ignorance of retail buyers. Many buyers do not like to shop around. They pay the price that is asked, so long as it does not seem to them to be unreasonable. Certain dealers may thus be able to charge more for their merchandise than is warranted in view of the prices that prevail elsewhere. A good location, a good name, an established clientele are factors that supplement the inertia of buyers in making possible a high price policy. And as noted in the preceding section, the reputation of a firm and other conditions may cause buyers to feel that it is advisable to patronize it even at the cost of higher prices. But aside from these considerations, genuine inertia of buyers is undoubtedly an important factor in accounting for the prices set by dealers on many articles.

The ignorance of buyers in respect to the quality of goods offered by competing dealers is also of significance in a comparison of the prices of different brands, grades, or makes of a given article. The relative quality of the different units of many, if not most, goods can be determined only in a laboratory, as was emphasized in the chapter on "Consumption." No ordinary consumer can judge competently of the wearing quality of the paint manufactured by the QM Company, as compared with the products of a half dozen other companies. He cannot try them all, and furthermore, he cannot try them all under exactly uniform conditions. Likewise, in regard to countless other items of merchandise, the consumer cannot submit different brands to a scientifically controlled test. In the matter of clothing, for example, the usual person cannot check up on his selection of a certain fabric by comparing it in a thorough manner with the half dozen or more other fabrics that he might have chosen. To repeat an illustration from the chapter already referred to, the American public is supposedly highly conversant with the automobile. Almost every person has his favorite kind of car, in mind, at least. Yet the volume of accurate information in regard to gasoline, oil, and tire consumption, braking power, upkeep, and depreciation is pitifully meager. Certainly no ordinary person who is contemplating purchasing a car can determine to a nicety the relative qualities of the different kinds of cars and thus form a basis for price comparisons.

In short, in many lines of merchandise, persistent advertising and efficient salesmanship may make it possible for a given firm to charge a relatively high price for its product, in view of the quality thereof, over a long period of time, or even indefinitely.

This can be done, of course, only within limits. The price of one dealer cannot be greatly out of line with the prices of other dealers for articles of similar quality. Further, most manufacturers and dealers understand that if an enduring business is to be built up the quality and the price of particular articles must be closely comparable to the quality and price of other similar articles that are offered for sale elsewhere. But despite this factor, the ignorance and inertia of consumers permit them to be preyed upon by certain business men. In other words, this permits departures from the principle of similar prices for similar articles.

PROBLEMS AND EXERCISES

299. Do sellers *set* prices, or are prices determined by supply and demand? Discuss. Explain carefully the rôle of the retail merchant in this particular.

300. Have you ever had a merchant cut his published (tag) price for you? If so, has this happened often?

301. If you were a merchant would you hold rigorously to the tag price? Discuss.

302. Do you believe that the principle of price maintenance is socially justifiable? Discuss.

303. "Local price cutting by large firms is fraught with social dangers." Do you agree? Discuss.

304. Distinguish between local cutting to stifle competition and to meet competition. Illustrate.

305. Explain Pittsburgh plus. Why was it objected to? Under what conditions will the abandonment of the plan prove to be advantageous to the United States Steel Corporation?

306. (1) "The prices of similar units of a good tend to be the same throughout a given market area."

(2) "The prices of similar units of a good tend to be different in the various stores of a given market area."

Which one of these propositions is sound? Or are both of them sound? If so, how can you account for the situation? Discuss.

307. "The consumer is an Alice in a Wonderland of Salesmanship: he is imposed upon at every turn." Might the first clause be true and not the second one? (Might the consumer be ignorant of quality and yet not be imposed upon?) Discuss. As a matter of fact, are consumers ignorant of quality? Discuss.

REFERENCES

The subject of price is discussed in all of the books listed in the appendix. Among these especial attention may be called to the treatment by Taylor, Taussig, Alfred Marshall, Cassel, Davenport, and Fairchild, Furniss and Buck. Articles upon various phases of the subject appear frequently in the economics journals that are listed in the appendix. For additional consideration of the subject of the price policies of manufacturers and merchants see *The Principles of Marketing*, 1927, by Maynard, Weidler and Beckman, from which some of the material for the above chapter was drawn, and also M. T. Copeland, *Principles of Merchandising*, 1924, and P. D. Converse, *Marketing Methods and Policies*, 1924.

PART V

MONEY

CHAPTER XXVI

THE MONETARY SYSTEM

The Importance of Money. — In the preceding pages of this book, the attention of the reader has been called to the fact that our society is one in which the institution of private property prevails and in which there is a high degree of economic interdependence among the persons that comprise the society; and in the chapter entitled "Specialization and Trade" the point was made that the use of money is indispensable in such a society. Very obviously, the extensive selling and buying that take place to-day, including the whole system of profit making, are carried on in terms of money. Indeed, all the vast complex of economic relationships that not only make the people of our nation an economic unit, but that also tie our economic life to that of the peoples of other nations, center in the monetary system.

No one economic institution has such commanding importance in our economic life as has the system of money. A radical change in the monetary system of a country, such as took place in Germany and Austria shortly following the World War, will disorganize the economic life of the entire nation, as is clearly shown in the records of these two countries. Even the relatively slight change in the money system of England which took place in the spring of 1925, when the former gold standard was restored, is said by many careful observers to have been an important factor in the continuance of industrial distress and unemployment during the subsequent year and a half.

Further, the industrial life of a modern nation is so delicately adjusted to its money system that merely the fear that a change may be made may disarrange the economic life of the nation. Many business men may refuse to undertake production and as a result other men may fail in business, unemployment may reach large proportions, and poverty and suffering become the lot of vast numbers of persons. Indeed, the institution of money could not be other than of dominant importance in a society that is as overwhelmingly interdependent as is ours, for all of the interrelationships are in terms of money.

Banking. — The dominant feature of the monetary system to-day is banking. In this respect vast changes have taken place during the past one hundred years, and are still under way. Checks drawn on banks now constitute the means of payment for perhaps over 90 per cent of the total monetary exchanges of the country. It is thus in the field of banking that the most significant problems relative to a modern monetary system are found.

Money Defined. — The usual textbook definition of money is that money consists of those things which are generally acceptable in exchange. Hence, since bank checks are acceptable not generally but only when the drawer of the check is known by the payee to be reliable, checks are not money within the meaning of this definition. This definition of money seems to be undergoing a revision. The ability on the part of Y to accept a check from X, deposit it to his account, and write a check to Z, is so much like the passage of coin or paper bills from X to Y and from Y to Z that many writers have come to use the term money to include checks along with coins and paper bills. This is the meaning intended by a business man when he refers to the money market. In all such cases one thinks in terms of checking accounts and not in terms of the usual formal definition of money.

The survival of the old definition is perhaps but another illustration of the inclination of the scholars of one generation to repeat somewhat uncritically the definitions which they learn during the infancy of their scholarly careers. But, in the world of practical affairs, and hence, also in the field of scholarship, despite the definitions of the past generations, new meanings are given to old terms, as the inevitable changes of life force new ideas into the old clothes of former thoughts. But despite the newer and broader meaning of the term money, it is desirable to have a term to distinguish the older forms of exchange media from bank checks and other similar instruments of our banking institutions. The term money in its narrow meaning serves this purpose, and may be so used without any misunderstanding, by expressly declaring this meaning, if the context fails to indicate the meaning intended. The terms *cash* and *currency* are often used to mean *money* in the narrow sense of coins and paper bills.

The Money of the United States. — The money, using the term narrowly, with which most of us are familiar consists of coins which are fractional parts of the dollar and paper bills. These coins, the half dollar, quarter, dime, nickel, and penny, are all made in the mints of the United States government under the direction of the officials of the national treasury. They pass into circulation largely, if not entirely, through being sent to the various local banks by the Federal Reserve banks in exchange for paper bills or commercial paper. The Federal Reserve banks get the coins from the Treasury Department at Washington, or from the United States mints, in exchange for paper money.

The metal — silver, nickel, and copper — from which these coins are made is purchased by the government in the open market. As the metal put in each coin is worth considerably less than the face value of the coin, the government makes a profit on such coinage. Further, as already suggested, such coins are made only at the discretion of treasury officials, and are limited in amount to the demand of the public for small change.

Silver dollars are also coined and put into circulation under conditions that are identical with those governing the coins of fractional parts of a dollar. They are minted only at the discretion of the government and thus only as there is a demand for them. Further, a profit is also made on such coins, as the silver in a silver dollar costs less than a dollar. There are 371.25 grains of pure silver in a dollar. Hence if the silver in a dollar is worth a dollar, an ounce of silver will be worth $1.29. The price of silver is now, March, 1928, approximately 57 cents per ounce. The metal in a silver dollar is thus worth about 40 cents.

Free and Gratuitous Coinage of Gold. — Gold money is in an altogether different position in our monetary system than is the silver dollar or the fractional dollar coins. While the silver dollar and the minor coins are made only at the discretion of the government officials, gold must be coined into money whenever it is presented for this purpose at one of the three United States mints. Or, what amounts to the same thing, gold coin must be given in exchange for gold bullion whenever it is requested at a national mint. In other words, gold is freely coined, but silver, and, of course, nickel and copper, also, are not freely coined. This marks a great difference between gold and the other money metals.

Further, gold is not only freely coined; it is also coined gratuitously, if it is presented at the mint with sufficient copper as alloy. That is, no charge is made for the coinage services of the government. This has been true since 1875, and was true before 1853. In the interim a charge was made for coinage. But throughout our national history we have had *free coinage* of gold. Free coinage and gratuitous coinage are thus not the same. The one term means that as much metal is coined as is presented for this purpose, and the other means that the coinage service is performed without charge.

Each of our gold coins contains 23.22 grains of pure gold per dollar, and 2.58 grains of copper alloy. The total weight is thus 25.8 grains, per dollar, of which nine-tenths is pure gold. The fact that gold metal, or bullion, is freely and gratuitously coined into money at the rate of 25.8 grains, nine-tenths fine, to the dollar, makes this much uncoined gold worth as much as one dollar. Clearly, if 25.8 grains of gold, nine-tenths fine, can be converted into a dollar without expense to the owner, then it cannot be worth less than a dollar; it will not be sold for less than a dollar, nor will it fetch in exchange fewer goods — buy less corn or wheat, for example — than will one dollar.

The Redemption in Gold. — There is one more fundamental point in our money system, namely, the Secretary of the Treasury is required by law to maintain "at a parity with gold," "all forms of money issued or coined by the United States." This means that any United States money, not including bank notes, must be redeemed in gold, dollar for dollar, at the treasury. So long as this is done — so long as gold redemption is continued — a silver dollar or a paper dollar cannot be worth less than a gold dollar. Further, as there are no legal restrictions upon the melting of gold coins into bullion, such coins cannot be worth less than the bullion that they contain. Hence, so long as all money is redeemable in gold, any dollar is worth as much as is 25.8 grains of gold nine-tenths fine. That is, any dollar under these conditions will buy as many goods as will 25.8 grains of gold.

The Gold Standard. — Our money system is thus a gold standard system. The standard is the gold dollar, containing 25.8 grains of gold, nine-tenths fine. This much gold is equivalent to a dollar. The price of gold under these conditions is one dollar per 25.8 grains of metal, nine-tenths fine, or $20.67 per ounce of pure gold. The price is thus set by the government and so long as the money standard remains unchanged — so long as gold is freely coined and so long as all other money is redeemed in gold, the price cannot vary. Accordingly, the price of gold is not quoted in the market reports. Its price is $20.67 per ounce, month after month, and year after year.

The Maintenance of the Gold Standard. — Suppose now that so much paper and silver money should be presented for redemption that the Treasury Department could not continue to pay out gold in exchange for such money. This would mean that the gold standard had been abandoned: it would mean that a paper dollar, or a silver dollar, as the case might be, would no longer be worth as much as a gold dollar. The new value relationship between gold and the other money would be established as follows. Since the government would not (because it could not) give a gold dollar for, say, a paper dollar, the holders of paper dollars who desired gold, would then buy it in the open market. They would presumably offer a premium for gold — one paper dollar for something less than 25.8 grains of gold. The paper dollar and the gold dollar would then not be equal in value. Hence, the gold standard would no longer prevail.

Another evidence of the abandonment of the gold standard in such a case would be found in the fact that there would tend to be two prices for goods, if gold continued to be used as money. One price would be quoted if payment was to be made in gold, and another, a higher price, if payment was to be made in the other money.

The maintenance of a gold standard thus depends on the ability of the treasury officials to redeem in gold all of the money that is presented for redemption.

Foreign Trade and the Gold Standard. — But why should paper or silver money be presented for redemption in gold? It might be that gold was wanted for use in the arts, or that in times of trouble, as during a war, certain persons desired to hoard gold. But the principal reason for exchanging other forms of money for gold is to have it for use in foreign trade. Gold is acceptable as money in every country. The paper money of one country is normally not acceptable in other countries, nor are silver coins generally acceptable outside the country that issues them. Gold is universally current, especially for payments to banks. Thus, if an American dealer wishes to buy goods abroad for importation he may do this by, in effect, paying in gold. The normal operation is for such a dealer to buy from an American bank a draft payable by a foreign bank, in the currency of that country. He then sends this draft to the person from whom he has bought goods, and this seller presents it at his bank and gets payment. Before the American bank can sell such a draft, it must normally have money to its account in the foreign bank. Since gold is always acceptable at a bank, the American bank can build up an account in a foreign bank by shipping gold to it for deposit. This is fundamentally the same as the deposit of money in a bank by a business man in order that he may pay his bills with checks.

Thus if Americans are buying heavily from abroad, and if they are selling relatively little abroad, we should expect that American banks would wish to send gold to foreign banks, in order that they might be able to sell drafts to the American importers. The importers would wish to buy drafts in order that they might send them abroad to pay for the goods which they had purchased, or wished to purchase.

This matter of international money payments, which is called foreign exchange, will be much more fully analyzed in a later chapter. This brief discussion has been given to show how the people of one country may use gold in buying goods from the people of another country. It is this use of gold that has been the primary factor in forcing certain countries, at various times, to suspend gold payments and thus abandon the gold standard.

If it were not for the desire to use gold in buying goods abroad, it is unlikely that paper or silver money would ever in this day and generation be presented for exchange in gold, except as it might be desired for use in the arts, or as people might wish to hoard it during a war. In earlier times when gold was more widely used in hand-to-hand exchange than it is now, when paper was less used and was often of uncertain value, the general preference for gold often led to requests for the redemption of paper money. But to-day, it does not seem probable that anyone would rather have gold than paper for ordinary money use. Indeed, there is now a clear preference for paper money as compared with gold. Many writers say that paper money is acceptable because of the knowledge that it can be exchanged for gold, but the truth, it seems, is just the opposite; namely, that gold is taken by the usual person when it is occasionally offered, only because it can be exchanged for the commonly used paper money. The demand for gold at the treasuries of the various modern governments, in exchange for other money, is thus limited almost entirely to the demand that arises in connection with foreign trade.

The Urgency of the Demand for Foreign Goods. — A necessary element in this situation is the extent of the demand in the given country for goods from abroad. If the price level should be declining abroad, or rising at home, the demand for foreign goods would be strengthened and the demand for gold with which to make foreign purchases would be increased. Or if a country is at war, the demand for foreign goods may be very great. This is especially true if the war is a very arduous one, as was the recent World War. During that war, the belligerent countries were sorely pressed and, from the beginning of the conflict, they were anxious to buy goods from abroad, especially in the United States. Under the pressure of the war, they very largely discontinued the production of the goods that they had formerly exported, and thus they did not have goods to exchange for the goods which they so urgently desired. Hence, they were forced to pay cash (gold) or to borrow money (get bank credit) abroad. As would be expected under such conditions they used both methods in getting foreign-made goods. Gold thus flowed to this country.

The abandonment of the gold standard in the leading belligerent countries did not, however, wait upon the pressure to buy foreign goods for the conduct of the war. England, France, and Belgium all departed from the gold standard almost immediately upon the outbreak of war. This came because of the panic demands for gold in anticipation of the probability that the war would be arduous and that the gold standard would be suspended.

As the war continued, the belligerent countries began issuing paper money that was, of course, not redeemable in gold on demand. The continued desire to have gold in order to purchase goods abroad, and also in order to hoard it, increased the price of gold in terms of paper money. Thus gold money came to be worth more than paper money — prices of goods were higher if payment were to be made in paper than if payment were to be made in gold. Further, the issue of large quantities of paper money by the belligerent countries, and the liberal expansion of bank credit increased the buying power of the governments and of the general public in the home market and as a result of this increased demand, prices rose. This still further increased the demand for gold with which to purchase goods in the United States, where, although prices were rising, they had not risen so much as they had in Europe.

During the American Civil War the demand for gold to be used in foreign trade, and also, to some extent, the demand for gold by persons wishing to hoard it until the war should be over, led to a premium being offered for gold in exchange for the paper money or greenbacks, which the government had begun to issue, and which it was not redeeming in gold. Another way of putting this is that the greenbacks depreciated in value. At one time the gold dollar sold for $2.85 in paper, or to turn the statement about, the paper dollar was worth only 35 cents in gold. The more realistic statement is the first one as the paper money became the standard money; gold, whether in the form of bullion or coin, was bought and sold in terms of paper money, just like any ordinary commodity. In 1879, the government began redeeming the paper notes in gold, dollar for dollar, and thus the gold standard of 25.8 grains of gold per dollar was restored. To note further the importance of foreign trade in relation to the gold standard, it may be pointed out that this return to gold redemption — the reëstablishment of the gold standard — was greatly facilitated by the fact that our crops in 1880 were very abundant and those of England and Europe were almost total failures. This led to foreign buying in our markets and to a flow of gold into the country.

The Merit of the Gold Standard. — The essential feature of a good money system is the maintenance of a high degree of uniformity in the level of prices from year to year. The level of prices — whether the prices of all goods and services are high or low — is, speaking broadly, a function of the volume of goods and services that are offered for exchange and the quantity of money. There are supplementary factors that will be mentioned in a later chapter, but the important factors are the two indicated; namely, the quantity of things to be exchanged and the quantity of money. If we assume the quantity of goods and services offered for sale to remain approximately unchanged over a period of time, then we can say, if we neglect minor factors, that the general level of prices will depend on the quantity of money. The more money people have, all other things being equal, the higher they will bid for goods and thus the higher prices will become. The discovery and mining of gold in California in the late forties and in Alaska in the middle nineties caused the prices of all commodities in those localities to rise very high. The issuance of vast quantities of paper money in Germany in the period 1919–1923 caused prices to rise to inordinate heights. Indeed, the pages of history are replete with proof of the proposition that the quantity of money is a causal factor in the determination of the general level of prices. There are other causal factors, as already stated, but this is the most important one.

There can be no question that a rather high degree of uniformity in the level of prices from year to year is advisable. It is only under such conditions that the exchange of goods is facilitated, enterprises encouraged, and justice rendered as between creditors and debtors. Uncertainty as to future prices stifles enterprise, and if prices fall, creditors gain and debtors lose; while if prices rise, creditors lose and debtors gain. This suggests the chief merit of a gold standard monetary system as compared with a system of paper money that is not redeemable in gold. Gold is somewhat highly fixed in quantity. Additions are made to the total supply each year, and over certain short periods of time considerable amounts have been added to the supply of gold, but generally speaking, the additions of gold money to the total stock of such money for any given period of time is relatively small. That is, since gold does not wear out, the production for any one year tends to be of little significance, as compared with the accumulated stock. If gold is the standard money, if all other money is redeemable in gold, the total quantity of money, year after year, is thus rather narrowly limited. Changes in the money habits of people, however, may make a given quantity of gold do an increased amount of money work. Thus if the people of a community, who have been using a considerable volume of gold coin in hand to hand exchange, should come to substitute bank checks and paper money for a portion of the gold coins that they have been in the habit of using, this would mean that a given quantity of gold might safely be used as a reserve for a larger amount of bank checks or paper money than was feasible when the larger volume of gold coin was used. Hence, the volume of paper money and bank checks under a gold standard might be increased without any increase having occurred in the volume of gold. But despite such conditions one can safely say that if the money system is based on gold, the possible quantity of money is thereby controlled.

Fiat Money. — But if a government cuts loose from the gold standard and begins the issuance of irredeemable paper money, the quantity of money is then not subject to any limitation except as imposed by government officials. Paper money thus issued without promise of redemption in gold or silver is known as fiat money. There have not been many cases of the issuance of such money where the amount issued has not exceeded proper bounds. The issuance of irredeemable paper usually grows out of a desire for money funds by the government. Rather than attempt to get the necessary amount by taxation, especially if the needs are urgent, as in a war, and if taxes are already burdensome, government officials may easily adopt the less difficult method of getting funds by merely printing paper money. And once committed to the program of getting money for government operations by running a printing press, any suggestion to substitute the more rigorous method of taxation is likely to be stoutly opposed by taxpayers. Further, persons having things to sell encourage larger and larger issues of money in order that the government may buy freely, and that individuals by having more money will be better able to buy goods. Then, too, persons who are in debt encourage a further issuance of money in order that prices will rise and that the means of payments will be made easier.

The unfortunate experiences in this country with such money during the colonial period and during the Civil War will be recounted in later chapters. The French people had a sad experience with irredeemable paper money, called assignats, following the French Revolution. This money was finally so increased in volume that it became entirely worthless. All the European countries, including England, issued irredeemable paper money during the World War. The English succeeded best in holding the quantity within reasonable bounds, and began redeeming it in gold, pound for pound, in the spring of 1925. The French and Italians issued so much of this money that it fell in value to only about one-fifth of the former value of their money; or, in other words, the prices in these countries rose to about five times the pre-war level. Both of these countries are now practically on a gold standard, but instead of the franc and the lira being worth 19.3 cents in gold, measured in American money, as before the war, each is worth about one-fifth of the pre-war value.

The fall in the value of the monetary unit in each of these two countries, or, in other words, the rise of the price level, was of serious consequence to the economic life of these peoples. The reasons for this have already been indicated in part. It is especially significant that all holders of pre-war bonds or mortgages have lost four-fifths of the value of these securities. A bond for 10,000 francs, bearing 5 per cent interest, that was purchased in 1914 is still worth 10,000 francs and continues to yield 500 francs per year, we may assume, but the 500 francs, or the 10,000 francs, will buy only one-fifth as much now as before the war. All receivers of wages also suffered as the prices rose in these countries, as invariably wages do not rise as fast as do commodity prices during such a period. Certain classes of speculators and business men gained, but in general, the economic life of the nation was affected disastrously. It may, however, be noted parenthetically, that in view of the military situation during the war, the issuance of paper money by these countries was perhaps justifiable, despite the cost to the economic life of the people.

Germany and Austria issued so much paper money that it became entirely worthless. The following table shows the quantity of such money in Germany at various dates from the beginning of the war to 1924, and the price index at each corresponding date.

The economic life of the German people was sadly disorganized as a result of this excessive issue of money and the consequent skyrocketing of prices. When the finances of Germany were stabilized with the inauguration of the Dawes Plan in 1924 provision was made for a new gold mark. It was to be (and is)

TABLE 12

Wholesale Prices Compared with Notes in Circulation in Germany[1]

Year (December)	*Wholesale Price Index (Reichsamt Index Numbers)*	*Reichsbank Notes in Circulation (000,000 omitted) Marks*
1914	125	5,046
1915	148	6,918
1916	151	8,055
1917	203	11,468
1918	245	22,188
1919	803	35,698
1920	1,440	68,805
1921	3,490	113,639
1922	147,480	1,280,095
1923	126,160,000,000,000	496,507,424,772,000
1924	131[2]	1,941[2]

[1] *European Currency and Finance,* Report of Commission of Gold and Silver Inquiry, United States Senate, 1925, Serial 9, Vol. I, pp. 526-530.

[2] Reichsmarks. One reichmark was made equal to 1,000,000,000,000 old paper marks when the Dawes Plan was instituted, July, 1924.

worth approximately 23 cents in United States money as was the old mark. It was provided that paper marks should be redeemed in the new gold mark at the rate of a trillion to one. This meant that all debts — all bonds and mortgages and other debts payable in marks — were cancelled, since a debt as large as one trillion marks could be paid with 23 cents in gold. Provision was made, however, that certain debts of long standing should be paid in part, but all of the debts that were created during the paper money period were payable only in the paper marks. Thus, all Americans who purchased bonds issued by German cities or other corporations during this time lost all that they paid for them, which ranged downward from about 5 cents per mark in 1920 until the mark became worthless.

The advocacy of paper money is not restricted to war times. When large sums are desired it is to be expected that someone will wish that the money printing presses be set in motion.

In 1921, Henry Ford made a proposal to the United States Government that he should take over the government power plant at Muscle Shoals on the Tennessee River in Alabama and make a large investment for the utilization of the plant if the government would complete the construction of the power generating plant. It was estimated that this would require an expenditure of 30 millions of dollars. Ford suggested that instead of raising this money by taxation or by a bond issue the government should print paper money to this amount and use it for this purpose. Thomas A. Edison gave his support to Ford's proposal.

It is interesting indeed that these two practical men should have failed so completely to see the practical effect of such a venture by the government. By this method of securing money, rather than by levying taxes or selling bonds, the government would have had 30 million dollars more to spend, while the people of the country would not have had any less than before. The bidding of the public for labor and materials would have continued as before and thus the additional bidding by the government would have tended to raise prices. But the transference of buying power from citizens to the government as a result of paying taxes or buying bonds would not have this effect. Such methods would leave the total bidding power in the nation as it was before the money was raised, except as bank credit might be used to some extent in buying the government bonds.

To be sure, the amount in this case, 30 million dollars, was so small relatively to the total amount of money, which was about 8 billion dollars, that the effect would not have been appreciable. But if funds could be raised so easily for one government project, then why not get additional funds in the same way for other projects? Why use the method of taxation at all? Thus, one such venture is likely to be repeated. Further, the rise in prices which results from the issuance of paper money itself affords an excuse for additional issues. For, it is always claimed as prices rise, that there is not enough money in view of the height of prices. Rather than appreciating that the high prices have come about because of the money issues, the result is given as an excuse for the further augmentation of the cause. A Moscow journal, for example, in 1921, argued that prices had risen so high there that the supply of money was not sufficient. It calculated that there was need for 48 and one-half trillion rubles. There were then over one trillion rubles outstanding, which was over seven hundred times as many as there were in 1914.

But while the gold standard is highly preferable to an uncontrolled paper money system, it is by no means ideal. The price level has risen and fallen markedly under the gold standard as will be noted in later chapters. Certain economists would amend the gold standard, and others favor the abandonment of gold and the substitution of a carefully controlled paper money system. These proposals will be discussed later. For the present, we are content to emphasize the virtues of the gold standard as compared with irredeemable paper money as such paper money has been used to date.

Qualities of Gold of Historic Significance. — Gold has many qualities, other than that of a somewhat high degree of stability in value, that were of great importance in bringing about its use as money. It was desired almost universally. Anyone would accept it. If one did not wish to use it, it was always possible to trade it to someone else. Further, gold is light in weight in comparison with its value and thus could be carried about easily. It is, also, perfectly divisible, easily recognized, and under all conditions it is perfectly homogeneous. Pure gold is pure gold wherever it is found. Lastly, gold does not deteriorate. It does not rust as does iron, nor can it be consumed by burning.

These qualities also pertain to silver. They account for the fact that these two metals became the "precious metals" — that they superseded oxen, furs, salt, tobacco, diamonds, and dozens of other articles as money media. Silver, however, during the last half of the nineteenth century was discarded by most nations as a standard money. Although these qualities were of importance in making gold one of the two principal metals, most of them are of but little moment to-day. The almost universal use of money substitutes for gold — paper money and bank checks — and the relegation of gold to bank vaults and government treasuries, means, however important most of these qualities were when gold was used in hand-to-hand exchange, that they are of practically no significance to-day. The universal acceptance of gold by all people as bank reserves and government hoards and its relative stability of value are the significant qualities that make gold a good money to-day.

Gresham's Law. — The finance minister of Queen Elizabeth at one time was a man named Gresham. In one of his reports he made a statement to the effect that a bad money drives a good money out of circulation. This observation had been made before, but the principle involved became known as Gresham's Law. The preceding discussion indicates an important limitation upon this principle, namely, it is applicable to-day only as the "good money," gold, is desired for foreign trade. The American silver dollar, and the greenbacks, for example, do not lead to the expulsion of gold because the demand for gold for foreign trade is not urgent enough for this to result. If the United States should be involved in a devastating war, the desire to purchase goods abroad would lead to the export of gold. One means of getting gold for export would be the presentation of silver and paper money at the National Treasury for redemption in gold. Such money would then be "driving gold out of the country." Or, gold would be flowing out, leaving the paper and silver here. Again, if a large quantity of paper money should be issued, prices would rise at home and traders would then wish to buy goods abroad. This would lead to the export of gold in exchange for the goods to be imported. Thus the large issue of paper money would drive the gold money out of the country.

In an earlier day when the stock of money in circulation consisted of coins, there was always a tendency for the worn coins to displace the good ones. If gold was needed in the arts, full weight coins rather than worn coins were used, and also, in the conduct of foreign trade, full weight coins were used as the coins were exchanged on the basis of weight. Further, if one were to hoard money the full weight coins would be used. Most men were, furthermore, disposed to pass on the worn coins rather than those of full weight when payments were made. Thus there was a tendency for the light weight coins to remain in circulation and for the full weight ones to disappear. That is, the cheaper money tended to drive out the dearer. But to-day, Gresham's law has but little applicability aside from the operations of foreign trade under the conditions indicated above.

Legal Tender. — Another point of significance in relation to a country's monetary system is the legal tender provisions of the different kinds of money. Money is legal tender if it must be taken in payment of a debt that is to be paid in "dollars." If a contract calls for payment in gold dollars, the creditor may insist upon specific performance, as he may if the terms of the contract call for the delivery of bricks of a given grade. But if a certain number of dollars are to be paid, there being no specification in regard to the kind of dollars, the creditor must accept any money that the laws of the country declare to be legal tender.

Normally, the legal tender provisions are of no moment. Thus under our present laws, bank notes (the three kinds will be noted presently) are not legal tender nor are silver certificates, but no one has ever heard of a creditor's refusing to accept payment in such money. Nor, of course, are bank checks legal tender, but creditors do not refuse to accept them. The issue is significant only in case of a fundamental alteration in a money system. During the Civil War, the greenbacks were made legal tender and they were of less value than the gold or silver money that had been in common use. Hence, creditors who had made contracts calling for payment in dollars, which were assumed to be gold dollars, were forced to accept payment in greenbacks. Creditors in California were, however, able to resist the national government in this particular, and supported by a vigorous local public opinion carried the point of gold payment in that community.

Long term contracts in this country, as, for example, bonds that are to run for 50 or more years, and 99-year leases on real estate, usually stipulate that payment must be made in "gold dollars of the present weight and fineness." This provision is inserted to protect the creditor against changes in the legal tender provisions of our money. There was especial point to such provisions during the eighties and early nineties when it was highly probable that our money system might be changed from the gold standard to a silver standard.

Seigniorage. — Free and gratuitous coinage of bullion does not offer any opportunity to the government to profit from the coinage of money. In the days when political rulers administered governments largely in view to their own interests, monarchs sought to profit from the coinage of money. The heavy charges that were made were known as seigniorage. This took the form of requiring for coinage a larger quantity of metal than was put into the coins. That is, if the coin contained 80 grains of gold, a person who wished to have metal coined would have to present, say, 100 grains of gold for each coin that he wished to have made.

The practice of seigniorage is thus an attempt to make coins equal in purchasing power to a larger quantity of metal than they contain. Under certain conditions it is not impossible to do this. Coins are certainly worth more than uncoined metal as money. Traders might easily be expected to take a smaller quantity of metal in the shape of coins than they would be willing to take in the form of bullion. If a definite ratio were established — if a coin weighed 80 grains and if 100 grains had to be paid in order to get a coin made — the value of the 80-grain coin and that of the 100 grains of bullion might be kept equal. Such equality would, however, depend upon the absence of foreign trade.

Outside of the jurisdiction of the government that issues it a coin tends to pass current only at its bullion value. Thus, importers of goods under a system of seigniorage would find themselves required to pay for such goods in bullion, or to accept a discount if they paid in coin. This situation would necessarily disturb the former scale of prices. For example, ten pounds of wool might be worth either one coin of 80 grains or 100 grains of bullion within a country that did not have any foreign trade.

But the beginning of foreign trade and the importation of wool would alter the situation at once. The foreign sellers of wool would rate one coin as equal to only 80 grains of bullion. The importers would thus prefer to pay in bullion rather than in coin. They would offer to exchange the coins which they had for bullion at a rate of more than one coin for 100 grains of bullion, or they would offer to take less than 100 grains of bullion for one coin. This would alter the established ratio. One coin of 80 grains and 100 grains of bullion would no longer be equal. The system of seigniorage would have failed.

To vary the above illustration, if the importers pay money (coins) for the wool, which they would normally do, they would have to pay 5 coins for an amount of wool that is equal in value to 400 grains of bullion. This amount of wool is assumed to have been worth 4 coins before the beginning of foreign trade. In other words, the price of wool in the country in question would rise — the money of the country would fall in value to correspond to the value of the bullion in it. Thus the system of setting prices either in coins or a certain larger quantity of bullion would disappear, and no one would then take bullion to the mint to be coined on the old terms. The seigniorage scheme would have to be abandoned. Such, in brief, was the repeated experience of the monarchs who made a charge for the coinage of standard money. "Every possible expedient, short of absolutely prohibiting foreign trade, was tried by sovereigns in their efforts to retain their profits. But market forces were found to be stronger than royal regulations." [1]

Under Henry VIII and his son, Edward VI, in England, and Phillip the Fair and Louis XIV in France, many attempts were made to profit by the seigniorage process. These were not on the plane of the plan outlined above, which assumes that the seigniorage principle is introduced at the beginning of a monetary system. They were, instead, alterations of established systems in the interest of the royal treasury. They are commonly referred to as debasements of the coinage. Coins received by the government in payment for taxes, fees, and dues, and coins that were surrendered at the request of the government were melted down and recoined into a larger number of pieces. This was done either by making the coins lighter in weight or by increasing the amount of alloy in them. The idea in every case was to keep the new coin equal in exchange value to the older coin which contained more of the precious metal. But the ensuing results were deplorable in every case. Prices rose, and this was especially disadvantageous to wage earners, producers of goods that were sold in narrowly local markets, and all other persons whose incomes did not rise fast enough to keep pace with the rising prices; foreign trade was disorganized and business activity was curbed because men were uncertain as to the level of prices in the future. In short, economic processes were badly disarranged, as a result of these royal attempts to secure income as a result of changes in the money system.

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[1] R. T. Ely, *Outlines of Economics*, 4th ed., 1923, p. 241.

The Gold Exchange Standard. — The gold exchange standard is a device by which colonies, especially, have been given what amounts to a gold standard, without the expense that would be involved in establishing it. To establish a gold exchange standard, it is not necessary to disturb an existing colonial money system, unless silver is being freely coined, in which case the cessation of free coinage will be necessary. The local coins in such a system are given a fixed value in the monetary unit of the governing country and their volume is controlled by its officers. The value of the local coins is expressed in terms of bills of exchange (bank drafts) payable in gold in the governing country. The Philippine Islands have such a system. For two silver pesos the American government in the Philippines will give a draft on a New York bank for $1. This necessitates the maintenance by the American Government of a fund in a New York bank for this purpose. The value of a silver peso in the Philippines cannot, then, fall below, or at least not much below, the value of fifty cents in America.

India, since 1893, has had such a system, the basis being bank drafts (foreign exchange) on London. As the English people abandoned the gold standard during the war, the Indian system could not then be called a gold exchange standard; rather it was an English paper money exchange standard. The term "exchange," be it noted, refers to the use of foreign exchange (foreign bank drafts) and not to the fact that these are exchanged for the local money.

The gold exchange standard is not, however, limited to colonial governments. Austria-Hungary had such a system for many years before the World War. The central bank was not required to redeem its notes in specie, but was required, under penalty of losing its charter, to give foreign exchange at a specified rate for its notes when this was requested. Some of the South American countries now have an optional gold exchange standard. They may redeem their currencies either in gold or in gold exchange. France also has the gold exchange standard now, and likewise Germany and certain other European countries.

PROBLEMS AND EXERCISES

308. Discuss the importance of money in our economic society. Illustrate the disadvantage of barter.

309. Would money be needed in a communistic society? Explain.

310. (*a*) "Free (unrestricted) coinage and unrestricted melting keep 23.22 grains of pure gold worth $1.00." Explain. Are both free coinage and unrestricted melting necessary to maintain the parity of the standard money? (*b*) What is it that keeps all forms of money equal to gold money in this country?

311. Describe a situation that would make it impossible for us to maintain the gold standard.

312. What would be the effect on prices of an increase in the quantity of money? Cite a few cases to prove the point. Show just why this is the effect of an increased supply of money.

313. What is the chief merit of the gold standard?

314. What are some of the factors that normally lead to an overissue of irredeemable paper money?

315. Argue that Ford's proposal for financing the Muscle Shoals project would not have reduced the cost of the same to the people of the nation although it would have reduced the cost to the "government."

316. What qualities of gold caused it to supersede oxen as a money medium? Why do you suppose oxen were ever used as money rather than gold?

317. The silver in the silver dollar to-day is worth less than 50 cents. Why, if Gresham's law is valid, do not these "cheap" silver dollars drive the gold out of circulation and make silver the standard money?

318. Could arrangements be made so that an American gold dollar of present weight and fineness (23.22 grains pure gold) would be equal in value to 26 grains of pure bullion? Explain. If these values were made equal what circumstances other than a change in policy might make them unequal? Explain.

319. How does the gold exchange standard differ from the gold standard? What are the advantages of the former? Would a gold exchange standard be feasible for the United States? for Cuba?

CHAPTER XXVII

THE MONETARY SYSTEM *(Continued)*

Paper Money in the United States. — There are seven kinds of paper money in our monetary system, namely, gold certificates, silver certificates, United States notes (greenbacks), treasury notes of 1890, national bank notes, federal reserve bank notes, and federal reserve notes. These may be classified into three divisions: certificates, United States notes, and bank notes.

The certificates are warehouse receipts. Each gold certificate certifies that a given number of gold dollars, or the bullion equivalent, has been deposited in the United States Treasury as security for it, and that they will be paid on demand in exchange for the certificate. A silver certificate carries a similar statement relative to one or more silver dollars having been deposited in the United States Treasury, the same being payable on demand. These paper bills are issued because they are more convenient to the public than are gold coins or silver dollars.

The United States notes (greenbacks) and the so-called treasury notes of 1890 will be discussed later. Likewise the nature and history of the three kinds of bank notes will be explained at a later place. It is sufficient now to note that all of this paper money is in effect an obligation of the United States government, and that the Treasury Department is required by law to redeem any of it in gold on demand.

The Total Stock of Money in the United States. — The Treasury Department under date of December 1, 1927 gave out the following data relative to our stock of money:

TABLE 13

Circulation Statement of United States Money — Dec. 1, 1927[1]

Kind of Money	*a* Total Stock of Money	Money Held in Treasury	Money outside of the Treasury		
			Federal Reserve Banks	In Circulation	
				Amount	Per Capita
Gold Coin and Bullion	*b*$4,455,132,810	$3,535,205,637	$532,576,953	$ 387,350,220	$ 3.29
Gold Certificates	*c* (1,615,269,359)	....	520,476,000	1,094,793,359	9.31
Standard Silver Dollars	537,944,446	477,327,243	11,820,238	48,796,965	.41
Silver Certificates	*c* (470,123,061)	....	77,825,770	392,297,291	3.34
Treasury Notes of 1890	*c* (1,317,600)	....	....	1,317,600	.01
Subsidiary Silver	298,264,362	2,135,889	11,174,495	284,953,978	2.42
United States Notes	346,681,016	3,307,290	45,257,691	298,116,035	2.54
Federal Reserve Notes	2,126,704,145	1,860,700	430,507,055	1,694,336,390	14.42
Federal Reserve Bank Notes	4,439,688	82,835	33,991	4,322,862	.04
National Bank Notes	702,401,099	18,031,916	45,341,300	639,027,883	5.44
Total December 1, 1927	$8,471,567,566	*d*$4,037,951,510	$1,675,013,493	$4,845,312,583	$41.22
Comparative totals:					
November 1, 1927	$8,552,579,774	*d*$4,163,131,624	$1,631,491,537	$4,843,500,841	$41.25
December 1, 1926	8,485,116,656	*d* 4,183,670,291	1,490,575,144	4,949,247,261	42.62
November 1, 1920	8,326,338,267	*d* 2,406,801,772	987,962,989	5,628,427,732	52.36
April 1, 1917	5,312,109,272	*d* 2,942,998,527	953,320,126	4,100,590,704	39.54
July 1, 1914	3,738,288,871	*d* 1,843,452,232	....	3,402,015,427	34.35
January 1, 1897	1,007,084,483	*d* 212,420,402	....	816,266,721	16.92

a. Includes United States paper currency in circulation in foreign countries and the amount held by the Cuban agencies of the Federal reserve banks.

b. Does not include gold bullion or foreign coin outside of vaults of the Treasury, Federal reserve banks, and Federal reserve agents.

c. These amounts are not included in the total since the money held in trust against gold and silver certificates and Treasury notes of 1890 is included under gold coin and bullion and standard silver dollars, respectively.

d. The amount of money held in trust against gold and silver certificates and Treasury notes of 1890 should be deducted from this total before combining it with total money outside of the Treasury to arrive at the stock of money in the United States.

[1] Treasury Department, Division of Loans and Currency.

Considered from the point of view of redemption in gold these data may be classified as follows:

Money in the United States, December 1, 1927

Silver	$ 836,208,808	
Paper	5,266,935,968	
Total silver & paper		$6,103,144,776
Gold		4,455,132,810

These two sums are in excess of our total stock of money, for as noted in footnote *c* (page 438) in order to get the total amount of money both gold certificates and the gold held as security for them should not be counted. Likewise, silver certificates and treasury notes of 1890 should not be included for this purpose, if the money held for their redemption is also included. But to compare the total silver and paper money with the gold helps to an understanding of the place of gold in our monetary system.

On the date indicated the amount of silver and paper exceeded the amount of gold by more than one-third. And, incidentally, the amount of paper money was over six times the amount of silver money. However, these data alone give a very imperfect picture of gold as the medium of redemption, for they contain no reference to the use of part of this gold as a reserve for checking accounts in the banking system.

The Banking System. — This reference to gold as a reserve for checking accounts again calls attention to checking accounts as part of the money system. In addition to the fact noted above that some 90 per cent of the total volume of cash payments is made with checks, it is interesting to observe that while there is something less than 5 billion dollars in money in circulation (outside the treasury and federal reserve banks) there are over 57 billion dollars represented in checking accounts in the various banks of the country. The part of banking institutions in the monetary system is also indicated by the fact that more than 2¾ billion dollars of the total stock of money, which is less than 8½ billion dollars, is composed of bank notes.

Payment by Bank Check. — The method of payment by bank check is very simple. After establishing a checking account, which includes making a deposit and giving to the bank a copy of the signature to be used in writing checks, payments may be made merely by filling in a form which orders the bank to pay a specified sum to a designated person.

There are many advantages in using checks rather than cash. First, there is no danger of losing money through fire, theft, or misplacement. Second, checks may be written for any amount and thus there is no difficulty in making the exact change, as often occurs when cash is used. Third, the canceled check which the drawer later receives from the bank is evidence that a given payment has been made. The extensive use of checks to-day testifies to the desire of men to use this method of payment rather than money.

The growing popularity of bank checks as a means of payment has meant that the receivers of checks have been less and less inclined to take from the banks the money to which they are entitled. That is, to an increasing degree, checks have been presented to the banks for deposit rather than for payment in cash, and the accounts that are built up in this way are in turn drawn against by means of checks.

The fact that checks are deposited rather than "cashed" necessarily means that banks have need for but very little money relatively to the volume of business that they do. The usual bank needs only about as much cash as would be equal to 4 per cent of the total checking accounts of its customers. The reports of the national banks of the country show that they had in cash, on December 31, 1927, only 3¼ per cent of the total demand deposits (checking accounts) of their customers. Any further extension of the use of bank checks rather than money as a method of payment will, of course, mean a further reduction in the amount of cash which a bank will need to keep for every $100 which it has promised to pay on demand. Obviously, if no one ever asked for cash at a bank, banks would not need to keep any cash at all.

It is very interesting to note the change in the cash requirements of our national banks during the past several decades. From 1863, the date of the inauguration of the National Banking System, until 1878, the total deposits (checking accounts and savings accounts) were equal to about twice the amount of "lawful money reserve in bank"; by the nineties the relation between these two items was as 7 to 1, and since then the rise of deposits relatively to the lawful money reserve has been very rapid, being about 13 to 1 in 1909. In other words, in 1863 the checking accounts in national banks were not more than twice as much as the lawful money (gold, silver and greenbacks) that they held, but in 1909, the checking accounts, plus the savings accounts which were relatively of but little importance, amounted to thirteen times the amount of lawful money which the national banks had on hand. The banking business during these years thus came to depend more and more upon the use of checks as compared with money. Banks came to keep less money on hand because there were fewer calls for it.

The above data do not indicate accurately the relation between the money in the banks during this period and the volume of their checking accounts because "lawful money" does not include bank notes. All of the national banks may confidently be expected to have had some money of this kind on hand. But after allowing for their own notes, the data are significant. They indicate a marked growth in the use of bank checks rather than cash as means of payment during this half century.

It is inconceivable that we shall give up entirely the use of money in hand-to-hand exchange, but it is reasonable to believe that the trend of the past fifty years will continue, that is, that bank checks will be used to an increasing degree and money to a decreasing degree in the commercial transactions of the country.

Another way of phrasing this is that a banker who is in possession of, say, $10,000 in cash can promise to pay on demand a far larger sum than this. He can do this because experience teaches him that but few people will ask for the money to which they have claim. They prefer to keep it in a bank. Since each person wishes to keep his money in the bank, it turns out that altogether a group of people may have $250,000 in a bank, but there may be only $10,000 in cash in it. What really happens is that one does not "keep money in a bank" — one turns it over to the banker to be used by him until called for.

Methods of Making Deposits. — What may be called the primitive method of making a deposit in a bank is to take money to the bank and have it placed to one's account. But since the amount of money that is used is so very small in proportion to the volume of checking accounts, there must be some other means of making deposits. The explanation is that most bank deposits are made by borrowing. Mr. Zachary, for example, wishes to buy $10,000 worth of new equipment for his factory. He wishes to pay "cash" for it, but doesn't have the money. He tells his banker of his needs; and asks for a loan of $10,000 for 90 days. His business standing may be such that the banker will be willing to make the loan in exchange for a note which he will sign. Or, the banker may be doubtful as to Mr. Zachary's ability to pay off the loan when it is due, and refuse to make the loan unless, in addition to signing a note, he gives sufficient securities to the bank, in the form of, say, bonds which the bank may sell in order to get its money if the note is not paid when due. Let us assume that Mr. Zachary is able to negotiate a loan, with or without the pledge of collateral, for $10,000 at 6 per cent interest for 90 days. The banker will then compute the discount on the note. The interest on $10,000 at 6 per cent for one-fourth of a year is $150. Following the usual banking practice, the note will thus be discounted by $150, and the resulting sum, $9850, will be available for Mr. Zachary. He will normally wish to have this amount added to his checking account, rather than have it paid to him in cash. When this is done, he is said to have made a deposit. In effect he has borrowed money and forthwith deposited it.

Mr. Zachary might also have increased his checking account by selling to the bank a note which Mr. Vroom had given him. Mr. Zachary would indorse the note and thus make himself liable to the bank in case Mr. Vroom should fail to pay the note when due. The note thus becomes two-name paper. The bank would discount the note, as illustrated above, and place the resulting sum to Mr. Zachary's credit if it is satisfied that the note will be paid when due.

Again, let us suppose that Mr. Zachary has a claim of $10,000 against Mr. Teagarden for goods which he has sold him on 90 days credit, and let us suppose, further, that Mr. Teagarden agreed in the contract that Mr. Zachary might draw upon him. Mr. Zachary in such a case could draw a draft (a commercial draft) against Mr. Teagarden stating that he is to pay to Mr. Zachary, or order, $10,000, 90 days from date and take it to his bank. The bank would then present this statement (draft) to Mr. Teagarden and he would write the word *accepted* across the face of it and sign his name. Or, Mr. Zachary might have presented the draft to Mr. Teagarden for his acceptance before taking it to the bank. In either case, it is now two-name paper, and the bank will, if it is satisfied as to the business reliability of at least one of the two men, discount the accepted draft, or the acceptance, or the bill of acceptance, as it is variously called, and place $9850 to the credit of Mr. Zachary.

The first of these three cases is that of a loan by the bank to Mr. Zachary, and the other two cases are in effect sales of commercial paper by him to the bank. The bank buys them at a discount. The loan is also discounted in the first case assumed, but if a loan is made, as is sometimes the case, with "interest to follow" the discount feature is not involved. This entire group of transactions is spoken of by bankers as *loans and discounts*. It is by such operations that bankers get interest upon the funds which they use in business. In each of these three cases the bank gets $150 for loaning (or advancing) $9850 for 90 days.

The balance sheet of the bank shows the items, such as noted above, under the caption *Loans and Discounts*. This appears, of course, on the assets side of the balance sheet. *Deposits* are obligations on the bank to its customers and hence a liability. The point which has been made in the preceding paragraphs to the effect that deposits arise out of loans and discount is amply supported by the close correspondence of these two items in the following table, which gives data for the national banks over a period of nine years.

TABLE 14

LOANS AND DISCOUNTS AND DEMAND DEPOSITS IN NATIONAL BANKS FOR SELECTED YEARS[1]

(IN THOUSANDS OF DOLLARS)

Year	*Loans and Discounts*	*Demand Deposits*
1912	$ 5,810,433	$ 5,630,559
1914	6,175,404	6,072,964
1916	7,490,111	6,221,226
1918	9,139,225	8,084,146
1920	11,994,523	10,044,189
1922	11,282,579	8,446,530
1924	11,952,287	9,292,127
1926	13,301,306	10,456,694
1927	13,647,640	10,430,341

[1] Report of the Comptroller of the Currency, 1927. Data are from the first report of the banks during each of the years.

Time Deposits. — The bank deposits which have just been considered are called demand deposits. They are payable on demand. All checking accounts are demand deposits. To provide business men with checking accounts by making loans and by discounting (buying at a discount) commercial paper is the special province of a commercial bank. Savings banks, on the other hand, do not have checking accounts. Their deposits are not made by their customers in order that they may draw checks in the payment of commercial obligations, but rather that they may save money. Banks invariably pay interest to the depositors of savings accounts. As part of the contract in the case of a savings account, the bank usually specifies that it is not obligated to pay the amount deposited until 30 days after a request is made for payment. This enables the bank to invest a larger portion of the money so deposited than it would otherwise be warranted in investing. That is, under such a contract, the bank does not need to keep as much cash on hand as it would need to keep if it were obligated to pay on demand the money of its depositors. Such deposit accounts are called *time deposits.*

Commercial banks usually have both demand and time deposits. These are usually designated as being in two different departments of the bank. The deposits of building and loan associations are time deposits. Such associations are in effect savings banks whose investment operations are restricted to the special field of loans on real estate.

Legal Reserves. — The amount of cash that a bank needs to keep on hand in order to meet its obligations is known technically as its cash reserve. In England and Europe, the banks are left to their own devices in regard to this matter. They are treated in this respect as are merchants whose amount of till money is never prescribed by law. But in the United States, the rule is that the law under which a bank operates specifies a minimum reserve which it must keep. The legal requirement is always expressed as a proportion of the deposits. Thus the law of Ohio provides that a commercial bank must keep a reserve equal to at least 15 per cent of its total deposits, and that a savings bank must have a reserve equal to at least 10 per cent of its time deposits and 15 per cent of its demand deposits. It further provides that out of these reserves an amount of money equal to 4 per cent of the demand deposits and 2 per cent of the time deposits must be kept in the bank's own vaults. The remainder of the reserve may be deposited in other banks, subject, of course, to withdrawal at any time. These provisions apply, obviously, only to banks that are organized under the laws of Ohio. They do not concern national banks. Further, if a state bank joins the Federal Reserve System the Ohio law provides that it is not then subject to these reserve provisions. It must then satisfy the national requirements. Although most of our states specify reserve requirements for state banks, there are a few states that do not make any reserve requirement for the banks incorporated under their laws.

The national banking laws provide that every national bank, and also any state bank or trust company that has taken membership in the Federal Reserve Banking System, must maintain a deposit in the Federal Reserve bank of its district equal to a certain portion of (1) the demand deposits, and (2) the time deposits which it holds for its customers. These accounts with, or deposits in, a Federal Reserve bank are commonly spoken of as "members' balances." The national banking laws do not require that national banks, or other banks that have become members of the Federal Reserve System, shall keep any cash on hand. The amount of cash which they keep is in no way specified by law. Their legal reserve is kept exclusively in the Federal Reserve Bank of their respective districts. This will be explained in greater detail in a later chapter. The Federal Reserve banks, however, are required to maintain a specified cash reserve.

The Function of a Legal Reserve. — There is something incongruous about a required legal cash reserve, such as is provided for by most of our state banking laws. If a given cash reserve is required and maintained, say, 10 per cent of the demand deposits, then, assuming the deposits to amount to $300,000, a bank must have $30,000 in cash. Strictly speaking, the reserve under such conditions is not a reserve for an emergency. Suppose in the case assumed, that $10,000 in cash is requested by demand depositors, and that the bank has only the amount of cash that is required, namely, $30,000. To pay the amount requested would reduce the cash to $20,000 while the demand deposits would be reduced to only $290,000. The $20,000 in cash that would be left in the bank would be less than 10 per cent of the demand deposits, and thus less than the amount that the law requires in the case assumed. The legal cash reserve under such a law can be maintained only by having sufficient cash on hand, in addition to the legal requirement, that the demands for cash will not impair the 10 to 1 ratio. The legal cash reserve under such conditions is similar to a reserve corps in an army that is not to be used — that is to be kept out of action regardless of the emergency that might arise.

However, the legal reserve requirement is usually not interpreted as strictly as has been assumed. Cash is normally paid out as requested, even if the amount left on hand is considerably less than the law requires. But in such a case, the bank at once takes steps to procure additional cash by the sale of bonds or other commercial paper. Practically, the legal reserve is more like a working reserve than it would be if the letter of the law were always strictly followed.

The reserve requirement for national banks, and other banks that are members of the Federal Reserve Banking System, is more logical than is the cash reserve requirement for most state banks, which has just been described. The national requirement, it will be remembered, is that an account (a deposit) must be maintained in the appropriate Federal Reserve bank, equal to a given proportion of the deposits which it holds for its customers. The amount of cash which it shall keep is in no way specified. Hence, to pay out any amount of its cash will not affect its legal reserve. This reserve requirement will be more fully described later.

It should also be noted, in this discussion of legal cash reserves that the maintenance of cash reserve tends to increase the security of banks. When banks fail, it is usually because the commercial paper which they have is not paid when due. In so far as they keep cash on hand, there is no danger of a depreciation in the value of that portion of their assets. Hence, to require that cash be kept tends to increase the security of banks. But as the keeping of cash prevents its being used to make money, there is, obviously, a limit to the amount of cash that banks may keep if they are going to pay expenses and make profits.

The Redeposit of Reserves. — It is also part of the American practice to permit the redeposit of the required reserves in another bank, particularly in a bank located in a larger city than that of the depositing bank. This was true for national banks under the old National Banking System. At present, as indicated above, all national banks keep their legal reserve in the Federal Reserve banks. The Ohio law is typical of other state laws in this respect, and of the former national law. It specifies that commercial banks shall keep a reserve equal to 15 per cent of their total deposits, and shall keep in their own vaults an amount equal to 4 per cent of the deposits which are payable on demand, and an amount equal to 2 per cent of the time deposits. In other words, eleven-fifteenths of the legal reserve of commercial banks in Ohio against demand deposits may be deposited in other banks, and thirteen-fifteenths of the reserves against time deposits may be deposited in other banks.

Banks are commonly paid something, usually about 2½ per cent, on their deposits in other banks. Consequently, banks invariably take advantage of the opportunity to count deposits in other banks as part of their cash reserve. This led under the old national system to a great pyramiding of bank reserves in the New York City banks, as will be noted later. The portion of the reserve, under such an arrangement, that is deposited in another bank must be subject to withdrawal on demand. The theory back of the provision permitting this deposit of reserve is that the money available from another bank is tantamount to cash. A bank that has redeposited some of its funds is less likely to have to refuse money payments than if such an amount were invested in, say, bonds that have either to be sold in order to get cash or pledged with a bank for a loan of cash.

Cash Payments and Insolvency. — As has already been suggested there is perhaps no bank anywhere that could pay *immediately* upon demand all of the money which it has pledged or obligated itself to pay. There could thus easily be such a demand for cash on the part of the depositors that a bank could not pay at once the cash demanded. Such a situation would by no means indicate that the bank was insolvent — that its debts exceeded its assets. If the bank has invested its money safely — if it has made loans only to persons who are able to repay them, it is solvent despite its inability to meet it demand obligations in cash. On the other hand, a bank may be really insolvent, but due to lack of demands upon it, this condition may exist for a long time and be unknown. There appears to have been a case recently among the Canadian banks in which a bank had really been insolvent for over forty years without any of its customers having suspected its insolvency.

The Elasticity of Deposit Currency. — Bank checks, as noted above, are a very important part of our money system. Since checking accounts are called deposits, checks are sometimes spoken of as *deposit currency*. But whatever terms may be applied to bank checks, they unquestionably have great elasticity. That is, the volume of checking accounts, and, also, the volume of checks that are written, vary greatly from time to time. Further, there tends to be a direct relationship between business needs for money and the volume of checking accounts. If business is booming, business men will wish to expand their checking accounts, and the fact of enlarged business operations will call into existence an added volume of commercial paper which may be discounted at the banks as a means of securing enlarged checking accounts. On the other hand, lack of good business will reduce the need for checking accounts, or deposit currency, and at the same time there will be a relatively small volume of commercial paper on which to secure bank credit. This adjustment of the volume of checking accounts to the business needs of the community is one of the marked advantages that come from the use of bank checks.

The variation in the volume of bank checks used from time to time is indicated by the following table. It will be noted that the volume of bank checks used increased greatly from 1919 to 1920 and then fell off sharply. For each of the years thereafter

TABLE 15

STANDARD INDEXES OF BANK DEBITS[1]

(AVERAGE 1920–1924 = 100)

Year	*United States outside N.Y.C.*	*New York City*
1919	96	103
1920	110	101
1921	88	87
1922	92	101
1923	104	101
1924	106	111
1925	119	132
1926	124	142
1927	131	196

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[1] *Standard Daily Trade Service*, January 20, 1926, p. 31 and *Sales and Credit Prospect*, March, 1928, pp. 2 and 5.

there was an increase in the volume of bank checks as compared with the preceding year, in the district outside of New York City. There was a similar trend for New York City except that there was not an increase in 1923 as compared with 1922.

Control Over the Volume of Deposit Currency. — The volume of checking accounts is adjusted to the needs of business as stated in the preceding section, but the adjustment is not made automatically; it is controlled by the bankers, as they alter their policy toward their customers. If bankers are optimistic — if they believe that business men will be able to meet their obligations when they fall due — they will be more liberal than otherwise in extending loans and discounting commercial paper. Checking accounts will thus increase in volume. But if bankers believe that business men may not be able to meet their obligations when they fall due, they will be unusually critical of requests for loans or of offers to sell (discount) commercial paper, and as a result the volume of checking accounts will be reduced. The bankers' attitude in regard to the probable course of business prosperity is a large factor in determining the volume of checking accounts — or deposit currency.

Many writers emphasize the alterations by bankers of the rate of interest as a means of control over the volume of checking accounts. The analysis is that they lower the rate when they believe it will be profitable for them to extend their business, and raise it when they wish to retrench. This, however, does not seem to be the method they use generally. The rate at the various banks has a high degree of uniformity month after month and year after year. They do not raise the rate when conditions would seem to justify it and when they would increase their profits by doing so. The explanation of their behavior is that an increase in the rate would displease their customers and, perhaps, in the long run, greatly reduce their profits. So, instead, they do not raise the rate when they wish to retrench but adopt a less liberal policy as to renewing loans and extending further credit. Further, the difficulty that is involved in raising the rate tends to prevent bankers from lowering it when it would be temporarily advantageous for them to do so.

But the alteration in the rate of discount at a central bank (at our Federal Reserve banks) is a significant factor in controlling the volume of checking accounts in the various banks. An alteration in this rate alters the profit which a bank may make by borrowing from the central bank and loaning to its customers. Hence, a local banker will be more liberal or less liberal in granting requests of his customers for loans as the rate at the central bank falls or rises.

Clearing Houses. — The use of bank checks as a medium of payment early led to the development of a clearing house for the banks of any one city when there were more than two banks. If there are seven banks in one city, each one of these will normally be called upon by its customers to accept checks written on each of the other six banks. Each bank would thus owe every other bank and be owed by every other bank. Rather than have messengers go from one bank to another until the accounts were all settled, it early appeared that each bank might send a messenger to a central meeting place, to pay to, or receive from, the other banks the amount due. This meeting place came to be known as a clearing house.

The volume of checks cleared in the clearing houses of the leading cities was for a long time used as an indicator of the state of business prosperity. The change in the volume of clearings from day to day was a fairly accurate index of the volume of business that was being transacted. But checks cashed in the bank on which they were drawn did not go to the clearing house. Further, and because of this, the consolidation of two or more banks would lead to a reduction in the volume of clearings, without there having been any reduction in the volume of business, and an increase in the number of banks would have the opposite result. Clearly, the total volume of checks cashed is a far more reliable index of business prosperity than is the volume of bank clearing, and within the past few years has come to be used for this purpose. In this connection, checks are commonly spoken of as *bank debits*.

It should perhaps also be noted that most "clearing house associations" have other functions in addition to the clearing of checks, as, for example, the examination of the banks that are members of the association and the determination of the policies that the different banks are expected to follow.

Bank Notes. — The demand deposits or checking accounts which have been discussed in the preceding sections of this chapter represent the promise on the part of the bank to pay money on demand. Suppose that in the case of Mr. Zachary, which was considered above, the bank had paid to him $9850 in its own notes, in the form of paper money, instead of giving him a checking account for this amount. The bank would then have been obliged to redeem these notes on demand in other money, just as it is obliged to pay the checks on demand which Mr. Zachary might write against his account. Or it would have been obliged to accept them for deposit or in payment of money due to it, as it accepts as cash the checks drawn against the accounts of its customers. Such bank notes — such paper money — would be in many respects exactly the same as bank checks. They would come into being as a result of loans or discounts by the banks, and would have the elasticity in volume that is one of the characteristics of bank checks.

Bank notes issued in this way are said to be based on the banking principle. In the early history of our country, banks were permitted to issue their own notes in this way. Many bankers were dishonest in the conduct of their business and paid out notes which they had no intention of redeeming. So many notes were issued in this way, and were, accordingly, worthless, that this privilege was taken away from the banks in 1866. With the adoption of the Federal Reserve Banking System in 1913, provision was again made for the issue of notes on the banking principle. This privilege is restricted to the twelve Federal Reserve banks. The national bank notes which were an important part of our stock of money from 1863 until the adoption of the Federal Reserve System are not based on the banking principle. These facts will be much more fully discussed in the three following chapters in which the history of our money system is reviewed with a view to elucidating further the principles of money and banking.

PROBLEMS AND EXERCISES

320. The gold and silver certificates in the United States monetary system are classed as "warehouse receipts." Explain by comparing them to the receipts held by a farmer who has deposited his grain in a warehouse.

321. List several advantages to a business man of using checks.

322. How do you account for the increased use of checks in this country?

323. (*a*) Just how can each of the banks in a city loan ten times as much money as it possesses?

(*b*) Why is it safe for them to do this?

(*c*) Under what conditions could they loan still larger amounts on their reserves? Under what conditions could they safely loan without any reserve?

(*d*) Is the amount to be loaned in this way specified by law?

(*e*) If a bank holds a large quantity of high-grade bonds, show that it may more safely keep a small cash reserve than if it had, instead, invested a similar amount in farm mortgages.

324. (*a*) "The banking system enables one to secure an amount of purchasing power closely equivalent to the amount of wealth he possesses." Explain. Could one as well add, "or expects to possess?" Explain.

(*b*) "Bank credit is the machinery by which all forms of wealth may be coined into dollars." Explain and illustrate.

325. Explain the relation between a bank loan and a bank deposit.

326. The five banks in Ann Arbor brought to the clearing house one day the following claims:

No. 1 against		No. 2 against		No. 3 against	
No. 2,	$2,213.19	No. 1,	$4,284.78	No. 1,	$4,974.66
No. 3,	1,865.09	No. 3,	2,172.45	No. 2,	1,607.79
No. 4,	2,415.96	No. 4,	3,043.18	No. 4,	1,093.24
No. 5,	512.21	No. 5,	655.87	No. 5,	625.88
Total	$7,006.45	Total	$10,156.28	Total	$8,301.57

No. 4 against		No. 5 against	
No. 1,	$ 3,078.73	No. 1,	$ 332.15
No. 2,	1,793.16	No. 2,	377.17
No. 3,	973.73	No. 3,	1,515.46
No. 5,	4,633.96	No. 4,	181.56
Total	$10,479.58	Total	$2,406.34

(*a*) Compute the balance for or against each bank.

(*b*) How much money was needed at the clearing house that day? (Taylor.)

(*c*) How can you account for the condition shown by bank No. 5, namely, that bank No. 4 cashed so many checks drawn upon this bank, while the other banks cashed so few, and that it cashed but few for any of the other banks? From this showing, is bank No. 5 necessarily the smallest of the five banks?

(*d*) Show concretely the saving that results from the clearing house in this town of five banks.

(*e*) Contrast bank clearings with bank debits as an index of the prosperity of a community. Explain.

327. A customer gives his note and opens a checking account.

(*a*) Show that if the bank should, instead of giving him a checking account, issue him due bills upon it (bank notes), the banking principle involved would be similar to that involved in establishing a checking account.

(*b*) In what way would the bank's notes be superior to checks as media of exchange?

(*c*) What element of danger is involved in allowing banks to issue their own notes?

(*d*) Should we impose reserve requirements in regard to notes? Why?

328. Show that the right to issue bank notes on the general assets of a bank would make the bank currency elastic.

CHAPTER XXVIII

AMERICAN MONETARY HISTORY

I. The Colonial Period

Wampum as Money. — The American colonists did not bring money with them. For one thing they were poor, but more than that they preferred to bring goods rather than money. No sooner had they arrived than they began to exchange goods with the Indians. The Indians had a very satisfactory money that was carved from a cockleshell into the form of a bead. This was called wampum. Since wampum could always be exchanged with the Indians for furs and other articles that were in demand among the colonists, the whites accepted it from the Indians in exchange for goods, and, likewise, accepted it from each other. Wampum, the money of the barbarians, thus became the money of the civilized intruders.

The ingenuity of the white men, however, soon made the wampum currency worthless. An Indian had been able to make but a very few wampum beads per day. Thus the supply of wampum was held down, and its purchasing power maintained. But the whites with their iron implements were able to increase greatly the output after they settled upon Long Island, where the principal deposits of the shell were located, and as a result, wampum greatly depreciated in its buying power. Massachusetts, accordingly, in 1649 prohibited the payment of taxes in wampum, although it was allowed to remain a legal tender for the payment of private debts until 1661.[1] The counterfeiting of wampum also became common and contributed further to its deterioration as money, but it "continued to be used more or less in New York as late as 1701." [2]

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[1] C. J. Bullock, *The Monetary History of the United States*, 1900, p. 8.

[2] *Ibid.*, p. 9.

In addition to adopting wampum as money, the colonists early began to use various commodities as exchange media. Beaver and other peltry in the north, tobacco in Virginia, and rice and tar in the Carolinas were extensively used as money. In addition to these corn was made a legal tender in Massachusetts in 1631, except in the cases where money or beaver skins were specified; and "the various colonists, at one time or another, authorized the payment of public or private debts in wheat, oats, barley, peas, bacon, pork, beef, fish, wool, flax, sugar, brandy, whiskey, and even musket balls." [1] Such "currency" when paid to government officials raised troublesome questions in regard to the price and quality of the commodities, as there was some disposition on the part of taxpayers to insist on high prices and, at the same time, to offer goods of poor quality. Further, the public officials had to face the problem of disposing of the commodities which they received.

The Use of Silver and Gold. — Despite the use of wampum and barter currency, coins early made their appearance in the colonies. In 1639, Winthrop notes in his *Journal* the arrival of a bark which brought "much wealth in money, plate, and sugar." [2] As a result of this importation of money and bullion, Massachusetts opened a mint in 1652 for the coinage of bullion and the recoinage of foreign money which was then in circulation. This was the only mint of any consequence established in the colonies. It was closed by order of the English government in 1683. The other colonies did not set up mints for two reasons. First, they were content to use the foreign coins, principal among which was the Spanish piece of eight or dollar; and second, the use of paper money, which began early in the colonies, made the use of specie less important than it would otherwise have been.

The colonies did, however, have a considerable volume of metal money. The world's output of gold in the period 1600–1620 was almost double what it had been in 1492, and the annual output of silver was multiplied by eight during this time. Silver was thus far more prevalent than gold during the seventeenth century. This increase in silver came largely from South America and was under the control of Spain. In the eighteenth century, the gold mines of Brazil, controlled by Portugal, began to yield large quantities of metal and by 1750 the annual output was four times what it had been 150 years earlier. The metal from these mines found its way into the American colonies and, despite the frequent assertion that is made to the contrary, the colonists had a considerable quantity of specie money.[1] All of this, as already suggested, was of foreign coinage, principally Spanish, with the exception of the coins that were struck at the Massachusetts mint, and some copper coins made by speculators.

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[1] *Ibid.*, p. 10.

[2] *Ibid.*, p. 144.

The coins during this early period were badly clipped, and "sweated." That is, the edge of the coin was pared off, or the coins were reduced in weight by other methods, as for example, by shaking them together in a sack. As a result of universal clipping and sweating, despite stringent prohibition laws, there was great confusion in exchange because of uncertainty as to the value of any one coin. To make matters worse, so far as intercolonial trade was concerned, the various colonies gave different values to the Spanish money in terms of the English money units that were used.

The idea prevailed that if one colony should consider a piece of eight (a dollar) as 7 shillings, while other colonies accepted it as 6 shillings, coins would thereby be attracted to the one colony. Further, any increase in the rating meant that debts could be paid more cheaply, unless definite provisions were made to the contrary. Thus it is easy to see that great pressure would be exerted to raise the nominal value of the Spanish coins. The English Parliament in 1707 passed a law to the effect that no colony should rate the Spanish piece of eight at more than 6 shillings, and other coins accordingly, but the law was not respected. Eventually, several of the colonies gave the coins the rates specified by Parliament, but many did not. The attempt of the English government to regulate the rates of specie was a factor in causing the colonies to look with favor upon schemes for paper money.

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[1] *Ibid.*, Chapter III.

It should be noted that the attempt of the various colonies to attract money by giving it a high rating was unsuccessful. As the Spanish dollar contained silver equal to 4 shillings 6 pence in English money, a decree that the dollar was equal to 7 shillings tended to lead to an advance of prices in Spanish money, which gave a person who possessed dollars no advantage as a purchaser in one colony as compared with a resident in another colony where the dollar had been made equal to 6 shillings.

Paper Money. — With the beginning of the eighteenth century, the colonies fell into a morass of paper money in which they and their descendants floundered almost continuously for one and three-quarters centuries, or until the late 1870's. There was in fact some paper money issued as early as the middle of the seventeenth century. About 1650 theories of paper currency began to appear in England, and before 1652 "paper bills" seem to have circulated in Massachusetts.[1] The early idea was that an association of persons should be formed, each one to turn over to the association mortgages on land, or other property to a given amount, and to receive in exchange notes of the association. Such notes were to be received by the members of the association, in payment for goods, or services, and it was expected that they would also be received as money by other persons. The association was called a *banke* or *fund.* Several associations of this kind were organized in the latter half of the seventeenth and the first part of the eighteenth century.

One serious defect of these "banks" was that provision was not made for the redemption of the notes on demand. Land was regarded as good security for the notes, but although land gave an association ultimate power to redeem its notes, it did not make it possible for the notes to be paid on demand. This was a fatal weakness at this time as paper money was always under the suspicion that it was not as good as specie. Only prompt redemption in coin could have maintained the confidence of the people in paper.

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[1] Bullock, *ibid.*, p. 31.

A factional dispute in Massachusetts over a projected Land Bank finally led the governor of the colony to appeal to Parliament. An act was then passed in 1741, declaring that the so-called Bubble Act of 1720 "did, does, and shall extend to America." The Act of 1720 had, however, applied only to the United Kingdom. It prohibited under severe penalties operations such as the Land Bank wished to conduct. This action of Parliament created great bitterness in Massachusetts, especially in the rural districts where many of the new notes had been taken in exchange for goods. "No step taken by the mother country was more maladroit than this. No other, not even the Stamp Act, caused greater bitterness. . . . Massachusetts was nearly ripe for revolution in 1741." [1]

The second kind of paper money to be issued in the colonies was government paper money. The notes were called bills of credit. Massachusetts was the first colony to issue such bills, doing so in 1690. The occasion for this issue of money was the return of soldiers from the unsuccessful military expedition against Port Royal and Quebec. It had been expected that the cost of the venture would be met by the fruits of victory. The colony was thus not prepared to satisfy the clamorous demands of the soldiers for payment of the amounts due to them. The General Court (the legislature) then provided for an issue of bills in anticipation of taxes to meet the emergency. These bills were to be receivable as taxes, but they were not to be redeemable at any particular time. It was resolved in this act that no more than £40,000, the amount then provided for, should be issued, but when the issue of such notes ceased in Massachusetts in 1748, there were £2,466,000 outstanding.[2]

The idea of issuing bills of credit was adopted by the other colonies, and by 1760 all of them had issued such paper money. It was put out not only to pay the obligations of the colonial government, but also as loans to individuals upon the security of property. The issue of bills of credit as loans took place first in South Carolina in 1712. From this example, says Bancroft, "the passion for borrowing spread like flame on a dry prairie."[1] Every colony except Virginia issued bills of loan, and it was only the veto of the governor that kept this colony out of the list.

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[1] H. White, *Money and Banking*, 4th ed., 1911, p. 242.

[2] Bullock, *ibid.*, p. 36.

The history of the colonial bills of credit is very sordid. The legislatures did not provide for redemption and, in the case of the loans, frequently extended the time of payment for both interest and principal. One issue was followed by another as has usually been true in irredeemable paper money ventures. The appetite for irredeemable paper money, once it is aroused, has almost always been insatiable, until the successive issues have finally rendered the money worthless.

As just suggested, this money very soon depreciated greatly, that is, prices rose markedly. This gave debtors a great advantage over creditors. The men of property soon saw the result to them of this method of finance, and, accordingly, the political division in the colonies became one of debtors and creditors, with the former in the ascendancy. Voters were urged to send poor men to the legislatures — men who would vote for more money. In anticipation of further issues of money and higher prices, rogues bought as heavily as possible on credit, and obtained possession of estates as trustees, and then used all of their wiles to increase the popular demand for more money.

The depreciation of the colonial paper money varied greatly in the different colonies, but was marked in all of them. The paper money not only led to great bitterness among the different groups in the colonies, but was a source of great irritation between the colonies and Great Britain. Acting under instructions from the home government, the colonial governors stoutly opposed the successive issues of paper money. Acts of Parliament in 1751 and 1764 forbade further issues. This attitude of the British government provoked the colonists greatly. There was demand for paper money not only by debtors and would-be borrowers, but also by all who would otherwise have had to pay taxes. The colonists objected, it seems, not so much to "taxation without representation, as to taxation under any conditions."[1] Further, many disinterested persons, such as Franklin, advocated the use of paper money. The interference of Parliament in this matter was widely regarded in the colonies as an infringement of the rights and liberties of Englishmen, and hence, as a sufficient reason for separation from the English government.

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[1] White, *ibid.*, 4th ed., p. 83.

II. The Revolutionary Period

The experience with colonial paper money, bad as it was, was not sufficient to prevent a continuation of the paper money orgy as soon as the colonies broke loose from Great Britain. Indeed, as one of the important factors in bringing on the Revolution was the opposition of the British government to colonial paper money issues, it was to be expected that the printing presses would be put in operation again as soon as the restraints from abroad were removed. Many of the most intelligent and respectable persons in the colonies opposed the break with Britain, and it is reasonable to believe that they did so, in part at least, if not largely, because of the fear that floods of paper money would be released to wreak havoc upon the trade and commerce of the country. If the merchant and creditor classes did fear this, subsequent events showed that they were justified in doing so.

The Continental Congress met in September, 1774, for a brief session. It met again on May 10, 1775, and on June 22 voted to issue $2,000,000 of paper money. Several of the colonies had provided for paper money of their own before the Continental Congress took this action, and within a few months each colony had decided to finance its part in the war with issues of paper money (bills of credit). With this attitude prevailing in the separate colonies, the Continental Congress could not expect to get funds by asking the colonies to levy taxes. The war, it must be remembered, was in large measure caused by two closely related issues — taxation and paper money. Having become free of British taxes, and of prohibitions against the issue of paper money, the new citizens were not disposed to take on tax burdens of their own making when revenue could be secured merely by running the paper money printing presses. By the close of 1775, the Continental Congress had provided for \$6,000,000 in paper currency, and within the next four years over \$240,000,000 had been authorized. Some bills were redeemed during this time, making the amount in circulation in 1779 about \$200,000,000. The various states also issued approximately this amount of money during this period.

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[1] Bullock, *ibid.*, pp. 58–59.

The large issues of paper money made it inevitable that such money would depreciate in value. In the fall of 1779, Congress declared that repudiation was unthinkable, but in March of the following year, it provided for redemption at the rate of 40 to 1. This meant the repudiation of 39/40 of the paper money. However, it must be remembered that much of this paper was issued after such money had begun to depreciate, and thus the persons receiving it from the government did not give up a dollar's worth of goods measured in silver for a dollar in paper. Nor did any person who exchanged goods or services for paper money, after it had begun to depreciate, give the equivalent of a dollar in silver for a dollar in paper, To have redeemed the paper in 1780 in silver, dollar for dollar, would have been tantamount to making gifts of over 95 cents per dollar from the funds of taxpayers to every person who had exchanged goods or services for paper during the preceding year, for it was worth then only a few cents per dollar. It was only in the almost impossible case of one who had in 1775 given goods or services equal to one silver dollar for a paper dollar, and then had kept the paper dollar until 1780 that there was a loss of 98 cents per dollar from having accepted the paper money. But, of course, any person who exchanged goods and services for paper money and failed to spend it before prices rose still more, lost something because of the depreciation of the money. George Washington clearly appreciated this fact and instructed his agent not to sell any land unless he at once bought other land.[1] During most of this period, the rise in paper money prices was so rapid that any receiver of paper money could hardly escape some loss.

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[1] Sparks, *Writings of Washington*, VII, pp. 214–216, Bullock, *ibid.*, p. 67.

The real sufferers were not those who held paper money in 1780, the date of the repudiation, for they presumably had received it but a short time before when it was worth not more than 2 or 3 cents per dollar, but the persons who bought mortgages or other claims to a given number of paper dollars some time before the dollar reached the point of its lowest value. Purchasers of goods, including land, as already implied, did not necessarily suffer, since the dollar prices of such goods rose as the dollar fell in value.

The preceding discussion shows the injustice that inevitably accompanies a depreciation in the value of money. After trade and commerce have gone on for a period of time under a falling money standard, it becomes as impossible to redress the wrongs that have been suffered, without imposing new inequalities, as it is to unscramble eggs.

Aside from the losses suffered by holders of mortgages and other receivers of fixed incomes, and the minor losses to holders of paper money, there is a still more serious count in the indictment against these paper money issues. This is the serious disorganization of commercial life that accompanied the marked changes in price levels. The future became so uncertain that enterprise was checked and the opportunities for chicanery were so multiplied that honest effort in production was still further curtailed. Washington, for example, said of the men of his time, ". . . idleness, dissipation, and extravagance seem to have laid fast hold of most of them; speculation, peculation, and an insatiable thirst for riches seem to have got the better of every other consideration, and almost every order of men; . . ."[1]

In the period following 1780, Congress issued $4,000,000 of new tenor notes, but they soon depreciated. No more notes were issued, however, and specie then came into use. But after the close of the war, the paper money mania broke out once more, in 1785 and 1786, in several of the states. This was avowedly a movement of debtors to reduce the value of debts. The lesson, however, was slowly being learned and in the Con-

[1] Sparks, *ibid.*, VI, 151, Bullock, *ibid.*, p. 69.

stitutional Convention the states by an overwhelming vote were prohibited the right to issue bills of credit. The action of the Constitutional Convention on this point, says Bullock, was one of the leading causes for the antagonism which the Constitution encountered when it was submitted to the states for ratification. The passion for government paper money, and lots of it, could not be easily cooled. But despite the restrictions of the Constitution on government paper money, the printing presses of the banks were soon set to work providing paper currency. Indeed, this began in a small way as early as 1781 with the organization of the Bank of North America at Philadelphia. But before discussing the bank currency, we shall note the monetary provisions that were made by the United States government in 1792.

III. The National Monetary System

The Mint Act of 1792. — Congress in 1792 made provision for a mint in which gold and silver should be coined. It was specified that the gold coins should contain 24.75 grains of pure gold per dollar and the silver dollars 371.25 grains of pure silver. The silver dollar was thus to contain fifteen times as much pure metal as the gold coins contained per dollar. The coinage ratio was thus 15 : 1. The mint was to coin all of the gold and silver that was presented, and to do this without charge. Thus there was to be free and gratuitous coinage of both metals. Further, both gold and silver were to be legal tender. The money system was thus a two money metal — a bimetallic — system, or one of bimetallism.

The new system did not result in the addition of much gold and silver to our stock of money. The money coined was largely exported. Such "hard" money as the country had consisted almost entirely of foreign coins — principally light weight Spanish coins which came in through the trade with the West Indies. Congress had early provided that certain foreign coins should be legal tender. This law was expected to run for only a few years at which time it was believed that American coins would be sufficient for the specie needs of the country. But on account of the export of American coins, the law making foreign coins legal tender was extended from time to time over a period of sixty years. It was not until after the silver coinage legislation of 1853 that American coins were used extensively and the legal tender provision withdrawn for foreign coins.

An unsuccessful attempt was made, shortly after 1800, to reduce the export of American coins. This took the form of stopping the coinage of gold eagles ($10 pieces) and silver dollars. It was thought that, since speculators and foreign traders would find it more difficult to collect the smaller coins than the larger ones, the country would not continue to lose its coins if only the smaller ones were made.

The Lack of American Coins. — As was stated above, the Act of 1792 provided that the silver coins should contain 15 times as much pure metal per dollar as the gold coins. This, at that time, made the silver and the gold coins equal in value. But during the next few years, silver fell slightly in value relatively to gold. In 1795, an ounce of gold was worth about 15½ ounces of silver. The value ratio remained at approximately this figure for many years, never again falling to the 15 : 1 ratio of 1793.[1] This change in the market ratio of gold and silver meant that the gold coins were more valuable, measured by their bullion content, than were silver coins. Hence, if one possessed gold bullion and wished money, a larger number of dollars could be secured by exchanging the gold bullion for silver bullion and having it coined, than by coining the gold. Almost all of the books that discuss this subject state that for the reason just indicated, no gold, or but little gold, was coined during this early period. The official record of the United States mint shows, however, that the coinage of gold exceeded the coinage of silver by almost one-third during the first twelve years of our monetary history. Indeed, from 1796 to 1805, inclusive, the gold coinage exceeded that of silver in all but two years. The explanation of this is, perhaps, that persons having gold found it more convenient to have it coined than to exchange it for silver. But although over $5,500,000 of gold coins were made, up to and including 1813, it seems that but very few of the coins remained in the country. They were used to purchase goods abroad, that were to be imported. The higher value of the gold coins as bullion than as money, measured by the cheaper silver coins, is often said to have been an important reason for their being used in the purchase of goods from outside the country.

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[1] These data are by Soetbeer as quoted in the report of the director of the mint for 1900, p. 205.

The silver coins, too, as already stated, were spent abroad. Two factors seem to account for this. First, the full weight Spanish coins contained more silver than did the American coins, but since the American coins were new and bright they could be exchanged for the older but heavier Spanish coins and the latter could then be taken to the mint for recoinage into a larger number of dollars. Second, aside from the exchange of coins, the new American money was freely acceptable in Spanish America and was used by traders in the purchase of goods. This use of American silver money in foreign trade suggests that if the gold coins had not been more valuable than the silver coins, they would have been sent abroad as extensively in foreign purchases as were the silver coins. Hence, perhaps the export of the gold did not depend, as so many writers say it did, upon these coins' being more valuable than the silver coins.

This was a period in which a considerable amount of paper money was used. The paper money tended to raise prices and thus to make it profitable for traders to buy abroad rather than at home, and to buy abroad for the purpose of reselling at home. Such trade would call for "hard money" and would thus lead to its exportation without regard to whether one kind of the "hard" money was worth a little more or a little less than the other kind.

It should also be noted that the well worn, light weight foreign coins got into our circulation by being used by traders in the purchase of American goods. Sellers did not ask higher prices when payment was offered in such money, and so traders tended to use such coins. The fact that there was so little specie in the country relatively to bank notes made Americans more willing to accept such light weight coins than would have been the case if specie had been more abundant. Such coins were not presented for recoinage as their small bullion content meant that the owners would suffer a reduction in the number of their dollars as a result of recoinage. While foreign coins were far more prevalent than American coins during this early period, they were by no means abundant. Paper money rather than specie was the circulating medium.

Bank Notes. — At the time of the adoption of the Constitution, there were three banks in the country that were all still in existence until a few years ago. The earliest of these, the Bank of North America at Philadelphia, was established in 1781, the other two, one in Massachusetts and the other in New York, were organized in 1784. Each of these banks issued notes.

The right of a bank to issue notes at that time was as unquestioned as is to-day the right of a bank to make loans which take the form of deposit checking accounts. These two functions, as noted in a preceding chapter, are fundamentally the same. In each case the bank loans, or really sells, its credit to the customer who uses this bank credit, whether in the form of notes or a checking account, as a medium of exchange. The two methods, however, differ sharply in that note issues may easily be carried beyond the bounds of wise banking, while this may not be done so easily in the case of checking accounts.

The overissue of bank notes was a curse of our monetary system until the establishment of the National Banking System during the Civil War and the prohibition, by means of a confiscatory tax, of notes issued by state banks. But not all of our state banks were offenders in this particular. The New England banks rather early, after a banking crisis in 1809, got on to a sound basis, and soon thereafter all of the banks in the older sections of the country mended their ways. But in the newer regions, bad banking continued until the Civil War legislation. This will be discussed more fully presently.

The Use of Bank Checks. — The bank check is believed to have been first used in Amsterdam in the sixteenth century.[1] It was used in the following century in England in the form of orders upon goldsmiths with whom money had been deposited.[1] It appears to have been in America that checks were first used to transfer bank credit as contrasted with the payment of money This was in connection with a banking scheme in Massachusetts in 1781.[2] In 1786 Peletiah Webster, writing for the Bank of North America, recounted all of the advantages of using checks that are commonly cited to-day, and added that the practice of using checks "is almost universally adopted by people who keep their cash in our bank." [3] Data concerning the early American banks are very meager, but it is believed that checks were used extensively in the larger cities.[4] Only two reports that show the notes and deposits of the first United States Bank, seem to be in existence. One for 1809 gives notes at $4,500,000 and individual deposits at $8,500,000; the other, 1811, notes $5,037,125, individual deposits $5,900,423 and United States deposits $1,-929,999.[5] A writer in 1810 says that "the public prefers bank notes to specie, and bank credit to both, and *must* prefer them, because they answer the same purpose with less risk and much less trouble." [6] Data presented by Spahr [7] show deposits and circulation in all of the banks of the country to have been approximately equal from 1830 to 1860. Evidently those writers have erred who have regarded deposit banking as of but little if any importance during the early part of our national history.

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[1] Joseph Bachem, *Der Deutsch Scheck,* quoted in W. E. Spahr, *The Clearing and Collection of Checks,* 1926, p. 15.

The First Bank of the United States. — Within a few months after Hamilton took office as the first Secretary of the Treasury, he recommended to Congress the establishment of a national bank. Congress promptly made provision for it. The amount of notes which the bank was permitted to issue was limited only by the provision that all of the debts of the bank were not to exceed by more than $10,000,000 "the monies then actually deposited in the bank for safe-keeping." The notes were to be accepted in all payments to the United States Government. The charter of the bank was to run for twenty years, or until 1811. The bank soon proved to be a very useful institution, but it early incurred the ill will of many of the new state banks.

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[1] See Spahr, *op. cit.*, p. 19, for copy of a check preserved in England that was issued Aug. 14, 1675.

[2] Spahr, *op. cit.*, p. 38.

[3] Spahr, *op. cit.*, p. 44.

[4] See Spahr, *op. cit.*, p. 53, for an interesting statement from Noah Webster made in 1801.

[5] Spahr, *op. cit.*, p. 54.

[6] Spahr, *op. cit.*, p. 54.

[7] Spahr, *op. cit.*, p. 65.

During the twenty years of the bank's history, the number of state banks increased greatly. In 1790, there were three such institutions; in 1800, 28; and in 1811, 88. Many of these banks issued notes without proper security from borrowers, and without sufficient specie to redeem them in coin on demand. The United States Bank refused to accept the notes of banks that were not paying specie for their notes when it was requested. In this way it performed the important function of regulating the note issues of the state banks. Although this was a splendid service to the country, the state banks resented this practice and began to oppose the proposal that the bank be given a charter for an additional twenty years. Another factor in the situation was the desire of state banks to secure the use of the deposits that the government was keeping in the United States Bank. Further, many of them felt that their ordinary banking business would be increased, if they could be relieved of the competition of the large bank. The politicians of the minority party saw an opportunity to harass the administration on the question of the bank, and developed a strong opposition to the request of the bank for another charter. The bank was denied a new charter by a narrow vote. In the House there was a majority of one, and in the Senate a tie, the Vice President casting the deciding vote, on a motion to postpone indefinitely the question of a new charter.

With the United States Bank out of the way, there was a rapid growth in state banks. The number increased from 88 in 1811 to 246 in 1816, and bank notes increased greatly in volume. It is estimated that there was $45,000,000 of such money in 1812 and $100,000,000 in 1817. The reckless issue of bank notes, augmented by the financial strain caused by the War of 1812, led in 1814 to the suspension of specie payments in almost all of the banks that were outside of New England. The notes of these banks varied greatly in value, some of them becoming entirely worthless. The national government alone lost over $5,000,000 as a result of accepting bank notes between 1814 and 1817.[1] From this time until the Civil War, the economic life of most of the region in the south and west was under the curse of irredeemable bank currency. Gallatin, who was Secretary of the Treasury in 1811, argued effectively several years later that if the United States Bank had been rechartered, the suspension of specie payments would not have occurred because of the control which it would have exercised over state banks.[2]

Treasury Notes of 1812. — During the War of 1812 and immediately thereafter, Congress provided for the issue of over $36,000,000 in treasury notes. The later issues were in part intended to replace the earlier ones, so that less than $20,000,000 was outstanding at any one time.[3] The larger notes bore interest at the rate of $5\frac{2}{5}$ per cent. They were not redeemable in coin, but were receivable for taxes and public dues. They were also not legal tender, and most of them were of such large denomination that they did not get into general circulation. All of these treasury bills, were, however, paper money.

The Second Bank of the United States. — In 1816, a law was passed establishing again a United States Bank. It was provided that both its deposits and notes were to be paid in specie and that its notes were to be accepted in all payments to the United States. Further, the notes were not to exceed the capital of the bank, $35,000,000. There was another provision governing note issues, namely, that all notes must be signed by the president and the cashier. This was the usual provision in bank charters. The bank was permitted to have branches, and established twenty-five in the various sections of the country.

The bank was badly managed at first. Specie was very scarce and bank notes abundant, but the bank sought to extend its currency. The branch bank at Baltimore failed with a big loss to customers in 1819. A new president then took charge of the bank, and pursued a conservative policy. The note issue was contracted from $8,000,000 in 1819 to $4,000,000 in 1823.

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[1] D. R. Dewey, *Financial History of the United States*, 8th ed., 1922, p. 145.

[2] White, *Money and Banking*, 4th ed., 1911, p. 264.

[3] Dewey, *ibid.*, p. 136.

Biddle became president of the bank in 1823. He desired to increase the note issue, but to avoid the dangers which nearly wrecked the bank between 1817 and 1819.[1] The requirement that the officers of the bank must sign its notes was a great obstacle in the execution of his scheme. It was estimated that four years would be required to sign the volume of notes desired. Biddle then devised a plan of permitting the branch banks to draw drafts upon the parent bank, calling for the payment of $5, or multiples thereof. These drafts were then paid out by the branch banks and circulated as money. In this way the circulation of the bank increased from an average of less than $5,000,000 in 1823 to over $11,000,000 in 1828.

The bank performed a good service in restricting somewhat the note issues of the state banks. The fact that the deposits of the bank could be paid only in specie, not in state bank notes, led to the presentation of state bank notes for redemption when they came into the possession of the parent bank or any of its branches. This tended to check overissue by the state banks. If the bank had been rechartered, it is to be expected that it would have exerted an even more salutary effect during the following decades, thus saving the western section of the country from the orgy of "wild cat" banking during the following quarter century. But Biddle very unwisely permitted the bank to become involved in a political fight against President Jackson and it was not rechartered. It came to an end in 1836.

The Coinage Legislation of 1834 and 1837. — As noted above, there was but little specie in circulation during the earlier period of our history and it consisted largely of foreign coins. Congress gave attention to this problem from time to time, and finally enacted legislation that was designed to increase the amount of specie in circulation. The change that was made consisted of a reduction in the amount of gold in the gold coins.

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[1] Dewey, *ibid.*, p. 156.

The proponents of this legislation believed that this cheapening of the gold coins would make our system in effect a gold standard, whereas it had been a silver standard, in so far as it had not from time to time, and from place to place, been a system of irredeemable bank notes.

The law providing for the reduction in the weight of gold coins was passed in 1834. Three years later another law made a slight change in the weight of the gold coins and in the alloy in the silver dollar so as to make both coins contain 9/10 pure metal and 1/10 alloy. The gold coins, since this law of 1837, have contained 23.22 grains of pure gold per dollar. The pure silver in a silver dollar (371.25 grains) is 15.98 times this quantity. The coinage ratio of silver to gold thus became approximately 16 to 1, whereas it had been 15 to 1.

The legislation of 1834 and 1837 reduced the amount of pure gold in gold coins by 1.53 grains per dollar. The value of this much gold was in excess of the former premium of gold coins over silver coins. That is, the gold coins were reduced in weight, not by an amount that would have made them equal to silver coins, but by an amount that made them worth less than silver coins. With 100 silver dollars one could after 1834 buy enough gold to coin 102 dollars. The monetary standard was thus debased 2 per cent. Creditors who were entitled to receive the equivalent of 100 silver dollars were required by this change in the law to accept 100 dollars in gold coin which were equal in value to only a few cents more than 98 dollars in silver.

Under the new law the amount of gold coinage greatly increased. Indeed, even before the act of 1834 was finally passed a shipment of gold was en route from England to the United States to take advantage of the new valuation of gold.[1] In none of the years preceding 1834, with the exception of 1820, was there as much as $1,000,000 in gold coined, but in 1834 almost $4,000,000 was coined. It is not true, however, that after 1834 but little or no silver was coined. The silver in coins was worth more than the gold in coins, dollar for dollar, and this has led most writers to conclude that no silver was coined. But according to the director of the mint, for nine years following the legislation of 1834, the amount of gold coinage exceeded the amount of silver coinage in only two years, namely, 1834 and 1836. It was not until 1843 that the volume of gold coinage became larger than that of silver coinage, and then it was appreciably larger. The discovery of gold in California in the late 1840's swung the balance still more definitely in the direction of gold, but the yearly volume of silver coinage was not appreciably reduced even though gold fell in value as compared with silver as a result of the increase in the amount of gold that was mined. The silver money, however, was largely exported, as will be noted presently.

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[1] H. G. Moulton, *The Financial Organization of Society*, 1920, p. 75.

An interesting phenomenon of the period of 1830–1860 was the coinage of gold by private individuals and firms. These coins were not of uniform weight or fineness, but they were generally accepted in trade. They were not counterfeits, as they were not made in imitation of the United States coins. In 1864 the government forbade private coinage and thus brought this practice to an end.

The Silver Legislation of 1853. — The American silver coins continued to disappear from circulation. The coinage of the silver dollar had been restored in 1836, but only a few were coined. The bulk of the silver coinage was composed of the fractional dollar coins, largely half dollars. But since the bullion value of these coins exceeded their face value as money, they were exported as bullion in exchange for goods. Their value in goods abroad, as bullion, was greater than their value at home, as money.

Congress provided in 1853 that the silver content of these fractional dollar coins should be reduced. They were made light enough in weight to bring their bullion value below their face value. This made it unprofitable to withdraw them from circulation. In 1857, the legal tender provision for foreign coins was withdrawn and they soon passed out of circulation. The specie in the country at last came to consist of American coinage, but, as will be noted presently, this specie disappeared during the Civil War.

The weight of the silver dollar was not changed by the legislation of 1853. It was a favorite in the trade with China and perhaps for this reason its weight was not altered. From 1853 to 1873, over 5,600,000 silver dollars were coined, but it is believed that almost every one of these was exported to China.[1]

Bank Notes from 1836 to 1867. — The issue of bank notes outside of New England, during this period, was productive of great economic distress. The New England banks had early been placed upon a sound basis under the leadership of the Suffolk Bank of Boston. This bank offered to redeem the notes of other banks if they would maintain with it a deposit of a given amount. The banks that were not able to redeem their notes, and thus not able to maintain a deposit for redemption in the Suffolk Bank refused to accept this offer. The Suffolk Bank then began to send all of the notes which it received on such banks to these banks for redemption in specie. The other Boston banks finally joined with the Suffolk Bank in this attempt to get rid of irredeemable bank notes. A large fund was contributed to apply the system to all of New England. The fight was very bitter but the resisting banks were forced to submit, and bank notes throughout New England became redeemable in specie on demand. By 1860, the Suffolk System is said to have been the best banking system in the world.

The other portions of the country did not fare so well as did New England. In New York, in the late 1830's, what was called free banking was introduced. This permitted banks to be organized without charters. It was said to be in line with the American ideal of freedom and equality. The result was an extravagant issue of notes many of which soon proved to be worthless.

The free banking system was extended to other states and a flood of bank notes was released. Fraud and corruption, as well as gullibility, marked the issue of notes. Many bankers had no thought of ever redeeming their notes, and many others who had good intentions were not able to do so. One device of the fraudulent bankers was to locate a bank in such an out-of-the-way place that the notes could not well be presented for redemption. Strangely enough, public sympathy was often so aligned with the bankers that persons who presented notes for redemption were denounced, and at times even tarred and feathered.

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[1] White, *op. cit.*, p. 36.

The bank notes were so abundant during this period and of such varying degrees of value that books or "registers" were published listing the notes that were in circulation and giving their value. Each merchant possessed such a register by which to ascertain the value of the money which customers offered in payment. To add to the confusion, these registers were often not dependable. A more deplorable condition of a community's money can hardly be conceived. The effect of this in encouraging fraud, in fostering speculation, and in checking economic enterprise must have been very marked indeed

PROBLEMS AND EXERCISES

329. Why do you suppose that wampum became valueless as money when the whites greatly increased its output? Would this happen in the case of gold?

330. Explain in your own words the device used by many of the colonies as a means of attracting coins. Why should they have been anxious to have more money?

331. Name two kinds of paper money that were issued in the American colonies. How did these two kinds differ from each other?

332. Why do you suppose the English government objected to the issuance of paper money in the colonies?

333. "When the Continental Congress in 1779 provided for the redemption of the continental money at the vote of 40 for 1 it repudiated 39/40 of its obligations to the holders of money." Show the truth or falsity of this statement by using the illustration of a land purchaser.

334. Why do you suppose most of the money coined in the United States after 1792 was exported?

335. ". . . note issues may easily be carried beyond the bounds of wise banking while this may not be done so easily in the case of checking accounts." Explain and illustrate from United States monetary history if you can.

336. Why, upon the expiration of the charter of the first United States Bank in 1811, do you suppose there was a rapid growth of state banks?

337. Do you believe that the first United States Bank should have been rechartered? Why? The second one? Why?

338. In 1834 the market ratio of gold and silver was 15.73 to 1. (*a*) Compare the value of the gold in an eagle with that of the silver in ten dollars before the change in coinage in 1834. (*b*) Compute the degree to which creditors lost after 1837 as a result of the change in the weight of gold coins.

339. When Andrew Jackson was elected President of the United States the citizens of the then western section of the country were considered as belonging to the debtor class while those of the eastern half of the country were considered as belonging largely to the creditor class. What attitude, do you suppose, was held by the citizens of the western states toward President Jackson's refusal to recharter the second United States Bank? By the citizens of the Atlantic seaboard states? Explain your answer.

340. By what means did the Suffolk System of banks give New England a banking system far better than that of the other parts of the United States during the early period?

CHAPTER XXIX

AMERICAN MONETARY HISTORY (*Continued*)

I. The Civil War Period

The Greenbacks. — It is clear that a vigorous policy of taxation should have been provided at the beginning of the Civil War in order to secure the money funds that were required by the government. There was not, however, at that time any adequate appreciation of the burden that was to be involved. It was believed that the conflict would be of short duration, and that the new tariff rates would bring in sufficient revenue. It was only as the war progressed that an adequate scheme of taxation was provided. By that time, the financial havoc was marked.

Soon after the beginning of the war the government borrowed $150,000,000 from a group of the leading banks. The banks expected to give credit to the government to the amount of the loan and pay the checks of the government when presented, perhaps in their own notes. The Secretary of the Treasury, very unwisely it seems, insisted that the loan should be paid to the government in coin to be held by it in the subtreasuries. This put these banks under a great strain, particularly as many persons were demanding coin which they wished to hide away pending the outcome of the war. The banks could not meet the demands of the people for specie and late in December, 1861, under the lead of the New York banks, specie payments were suspended throughout the country. This action was soon followed by the suspension of specie payments by the government. The gold standard was thus abandoned — paper money became the standard, and specie, including the small coins, disappeared from circulation.

The government had, during 1861, issued over $33,000,000 of demand notes. These were payable on demand and were receivable for all public dues. The redemption of these notes ceased early, as already stated, but, of course, they continued to be receivable by the government. This made them better than the state bank notes and they were thus at a premium. These notes were not, however, legal tender. The next step was to issue $150,000,000 of legal tender notes, later called greenbacks. "Why borrow money, or pay taxes," it was argued, "when the government can issue what money it needs?" The earlier notes, those of 1861, it should be observed, were expected to be paid on demand: they were a form of short term borrowing, but the issue of 1862 was frankly money. These notes were made legal tender, and thus creditors could not refuse to accept them in payment of debts. No provision was made for their redemption, but the earlier issues were convertible into United States bonds.

Another interesting point in connection with these notes, or greenbacks, is that they were not receivable as duties on imports. Importers of goods were required to continue to pay the tariff duties in coin, which was at this period largely gold. At the same time, it was provided that this paper money could not be used by the government to pay interest on the public debt. These two provisions were extended to later issues, and can be found on any greenback to-day. It was felt that the payment of the interest on government bonds in gold would make it easier to sell such bonds at par, and the refusal to accept greenbacks in payment of tariff duties made it possible for the government to get gold with which to pay the bond interest.

Other issues of greenbacks were soon authorized. In all, $450,000,000 was issued and in June, 1864, $431,000,000 was outstanding. In addition to these non-interest bearing, legal tender notes, fractional paper currency, called "shin plasters," and interest bearing notes running for brief periods were issued.

The value of the greenbacks depreciated rapidly. By the end of 1862 in the New York market they were worth 76 cents per dollar in gold; in December, 1863, 66 cents; and in December, 1864, 44 cents. The lowest price was 35 cents per dollar, which was reached in the summer of 1864. These prices really took the form of a premium on gold. Gold money was priced in terms of paper, rather than paper in terms of gold. The greenback *was* a dollar; gold money was at a premium. The highest price paid for gold in paper money during this time was $2.85 per dollar, which means, as already stated, that the lowest value of the paper dollar was 35 cents in gold. Silver was also at a premium during this time. As a result, as noted above, gold and silver did not circulate as money, and even the small silver coins disappeared. It was this that made it necessary to issue notes of denominations less than a dollar.

To say that gold and silver money rose in price in terms of paper means that the prices of all goods rose as measured in paper money. Prices in terms of gold rose only slightly during the course of the war, as is indicated by the Chart III, on the following page. Indeed, in 1863 the gold prices of commodities were lower than in 1860.

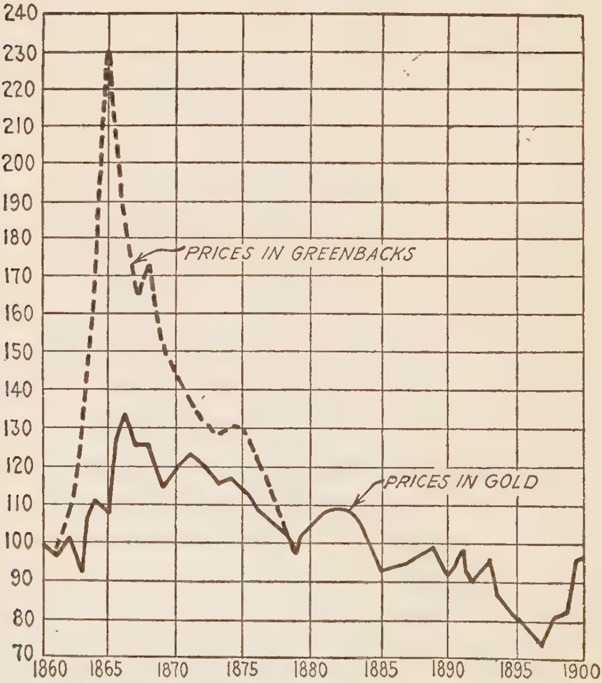
The price movements that thus resulted from the issue of greenbacks caused great distress in many quarters. Wages changed but little, and as a result wage earners were hard hit. Government employees were especially unfortunate in this particular. Further, all receivers of fixed incomes, and all creditors whose debts were payable in dollars lost heavily as a result of the rise in prices. Then, too, there is to be added to this indictment the fact that the general economic life of the nation was somewhat disorganized, as it is the inevitable result of a falling money standard.

Following the war, some of the greenbacks were retired. This action of the government aroused the opposition of many persons who did not wish the currency to be contracted. A greenback party was organized and for several years the cause of paper money was espoused. In the congressional elections of 1878 this party polled more than a million votes. It was finally provided that the greenbacks were to be redeemable in specie on January 1, 1879, but the Greenback party was successful in getting legislation which provided that the notes which were redeemed should be reissued, new ones being issued to replace those that were worn out. This meant that the amount of greenbacks then outstanding, $346,681,016, should continue as part of our money supply. This provision has not been altered, so that to-day we still have this quantity of the legal tender notes of the Civil War period in circulation, except as some of them have been lost or destroyed, or are temporarily out of circulation while new bills are being prepared.

II. 1870 TO 1896

The Decline in Prices. — The outstanding fact relative to our monetary history during these twenty-six years is that the prices of commodities declined throughout this period, as is indicated by the accompanying chart.

CHART III [1]



The Level of Commodity Prices, 1860 to 1900

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[1] T. E. Burton and G. C. Selden, *A Century of Prices*, 1919, p. 65.

This price movement was, furthermore, very marked. Prices in 1896 were only a little more than half as high as they were in 1870. While there were a few upswings, notably from 1879 to 1882 and from 1885 to 1889, the downward course was almost continuous from 1865 to 1897.

The fall of prices measured in paper money from 1865 to 1879 was still more marked and violent. This was, obviously, very disturbing to the economic life of the nation during these fourteen years, and helps one to understand the violent opposition to the retirement of the greenbacks and the resulting compromise legislation that provided for redemption without further reduction in the volume of this money. But beginning with 1879, our prices were measured in gold, as the law providing for the redemption of greenbacks went into effect at that time.

The Political Effect of the Decline in Prices. — This long decline in prices seriously disturbed business. It was especially disastrous to debtors. But aside from constantly increasing the burden of debts by making it necessary to furnish more goods and more days' services in payment thereof, it was a curb on industry. This was especially true during the periods when the price decline was sharp. During such times, many factories were closed and many frontier farms abandoned. This resulted in unemployment, and in distress, the inevitable accompaniment of unemployment. Such conditions could not have failed to direct the minds of men to the question of money, and to make it the dominant political issue.

There were short periods of time during these decades when the country prospered and interest in the money system abated, but for the most part the money question held the center of the stage. The long struggle closed with the hotly contested campaign of 1896, than which there has not been a more bitter political struggle in this country from 1860 to the present day. But in 1897 prices began to rise and the money question became a dead issue.

Economic Progress. — The impression must not be given that the country retrogressed economically during this period. On the contrary, there were marked developments in the industrial field. The use of steel, electricity, and oil was greatly extended. The telephone, street car, and skyscraper were developed during this time. Many large fortunes were accumulated and many industrial combinations of mammoth proportions were effected. Indeed, as will be noted presently, the economic advancement during this time, the increased output of goods, was one of the two chief factors in causing the decline in prices. But despite these evidences of economic progress, the falling price curve casts a gloomy shadow over these three and one-half decades.

The Cause of the Decline in Prices. — This downward movement of prices was not confined to the United States. In England and Europe, prices fell also. The explanation of the phenomenon must be sought in world conditions. In Europe and America, considered together or separately, we find a significant relation between the supply of goods and the supply of monetary gold. There was a tremendous increase in the amount of goods produced and offered for sale during this period, and but little increase in the amount of gold. The volume of goods that were bought and sold was so greatly augmented that, in view of the slight yearly increase in the total amount of gold, all of the buying could not be done at the old prices. Hence prices fell. But in the early nineties, the production of gold began to be increased and within a few years sufficient sums were added to the world's stock of money that prices began to rise. In the United States the rise in prices began in 1897, as stated above.

The Demonetization of Silver. — Let us note these conditions in greater detail. First, the leading commercial nations by the middle of the seventies had abandoned the system of bimetallism (gold and silver) and adopted the single gold standard. Great Britain had done this in 1816. Shortly after the Franco-Prussian war of 1870, Germany followed Great Britain's example in this particular, and within a few years France and the other leading European countries did likewise. In the United States, as will be noted more fully presently, the change was made in 1873. The result of thus changing from the use of both gold and silver as standard money and permitting only gold to be freely coined into money, narrowed the monetary base in the economic system. Especially is it true that the monetary supply was thus curtailed as compared with what it would have been during the seventies and the eighties if bimetallism had been continued, for the yearly output of gold declined during these years and the output of silver increased.

The Production of Gold and Silver. — The following table shows the estimates for the production of gold and silver from the mines of the world during these years.

TABLE 16

PRODUCTION OF GOLD AND SILVER IN THE WORLD FOR SPECIFIED PERIODS[1]

Period	*Gold* *Annual Average for Period*		*Silver* *Annual Average for Period*	
	Fine Ounces	*Value*	*Fine Ounces*	*Coinage Value in Standard Silver Dollar*
1841–1850	1,760,502	$ 36,393,000	25,090,342	$ 32,440,000
1851–1855	6,410,324	132,513,000	28,488,597	36,824,000
1856–1860	6,486,262	134,083,000	29,095,428	37,618,000
1861–1865	5,949,582	122,989,000	35,401,972	45,772,000
1866–1870	6,270,086	129,614,000	43,051,583	55,633,000
1871–1875	5,591,014	115,577,000	63,317,014	81,864,000
1876–1880	5,543,110	114,586,000	70,775,602	101,851,000
1881–1885	4,794,775	99,116,000	92,003,944	118,955,000
1886–1890	5,461,282	112,895,000	108,911,431	140,815,000
1891–1895	7,882,565	162,947,000	157,581,331	203,742,000
1896–1900	12,446,939	257,301,000	165,693,304	214,229,700

[1] Report of Director of the Mint, 1900, p. 214.

It will be noted that the annual output of gold during the late sixties was not matched again until the early nineties. With silver, on the other hand, the increase in the yearly production was pronounced during all of these years.

The Increase in the Output of Goods. — In sharp contrast to the decline in the yearly output of gold during this time, the output of goods was greatly increased. If the production of goods had not been so greatly augmented, the abandonment of silver as a standard money metal would perhaps not have led to a price decline. The total stock of money did increase, of course, during these years, although the yearly additions became less. But the increase in the output of goods was so large, as compared with the yearly additions to gold money that prices fell. The following tables give data relative to the production of goods during the period under consideration.

TABLE 17

PRODUCTION DEVELOPMENT IN SPECIFIED LINES IN THE UNITED STATES, 1860–1890[1]

Year	*Cotton (500 lb.) Bales*	*Wheat and Corn Bushels*	*Coal Long Tons*	*Pig Iron Long Tons*	*Primary[2] H.P. in Mfg.*	*Railway Mileage*
1860	3,841,416	1,011,898,000	13,044,680	821,223	....	30,626
1865	2,093,658	....	21,243,012	831,770	....	35,085
1870	4,024,527	1,329,391,000	29,496,054	1,665,179	2,346,142	52,922
1875	4,302,818	1,613,205,000	46,739,571	2,023,733	....	74,096
1880	6,356,998	2,215,985,000	63,822,830	3,835,191	3,410,837	93,267
1885	6,369,341	2,293,288,000	99,250,263	4,044,526	....	128,320
1890	8,562,089	1,859,668,000	140,866,931	9,202,703	5,938,635	167,191
1895	7,146,772	2,710,214,000	172,426,366	9,446,306	....	184,628

[1] Compiled from Statistical Abstract of the United States.

[2] Statistics for preceding year.

TABLE 18

PRODUCTION DEVELOPMENT IN SPECIFIED LINES IN THE WORLD, 1860–1890[1]

Year	*Cotton (500 lb.) Bales*	*Railway Mileage*	*Coal Short Tons*	*Pig Iron Long Tons*
1860	5,102,000	67,400	142,300,000	7,200,000
1870	5,550,000	139,900	213,400,000	11,900,000
1880	7,202,000	224,900	340,000,000	17,950,000
1890	11,200,000	390,000	466,000,000	27,157,000

[1] Compiled from Statistical Abstract of the United States.

The production output in the various fields covered in these tables for 1880 as compared with 1860 is almost incredibly large. In the table for the United States, cotton production shows the least increase, but the output of cotton was almost twice as much in the later year as in the earlier one. Coal production was almost five times as much in 1880 as in 1860, and the output of iron was almost two and one-half times as much in 1880 as twenty years earlier. But the average annual output of gold was almost one-sixth less during the period 1876–1880, than during the years 1856–1860. And during the next five years the decline in the production of gold continued. In this connection it is important to note that Cassel has concluded that it would have been necessary, in view of the normal increase in population and trade, to increase the stock of gold money by 3 per cent each year from 1850 to 1900 in order to have maintained a stable price level.[1]

The Failure of the Money System. — If attention is confined to the output of goods, one may conclude that it was not the money system that was responsible for the price decline, but the expansion of business. However, the fact that prices fell throughout this period is evidence that the money system was not performing its proper task. An ideal money system is one that makes possible a reasonably high degree of stability in the general level of commodity prices, or that, at least, prevents a long period of falling prices, for falling prices are far more disastrous to the economic life of a people than are rising prices. It was inevitable that the marked decline in prices in the United States should have directed attention to the money question. The fact, too, that silver had been demonetized led most logically to the demand that silver should be restored to its former position as a standard money. It would undoubtedly have been unwise for the United States to have restored silver to its former monetary position, unless the other leading commercial nations made a similar change. This point will be discussed later. It is sufficient to note here that if the European countries (including England) and the United States had not demonetized silver —

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[1] *A Theory of Social Economy*, 1924, pp. 441–445.

if they had continued the system of bimetallism — prices might not have declined during this half century. We shall now review the silver legislation in this country during this period.

Silver Money — 1850 to 1870. — The discovery of gold in California in the late 1840's and in Australia a little later led to a great increase in the yearly output of gold. In the second decade of the century, the world's output of gold is reported to have been 457,000 ounces per year; in the third decade 652,000 ounces per year; and in the fourth decade 1,760,000 ounces. But in the next decade, the 1850's, the average yearly output rose to over 6,000,000 ounces. The output of silver, however, increased but little from 1840 to 1870. As a result of these changes in the output of gold and silver, the value of gold fell relatively to the value of silver. The change, however, was not marked. During the 1840's the silver in a silver dollar was worth from one-third of a cent to one cent more than a dollar, in terms of gold. Following 1850, the value of the silver in a dollar rose to a high point of $1.052, in 1859. During the 1860's the premium was about three cents.[1]

This premium on silver was evidently sufficient to prevent the owners of silver bullion from asking to have it coined into silver dollars. It will be recalled that in 1853, Congress, in order to prevent persons from using the fractional dollar silver coins in foreign trade, reduced the amount of silver in these coins. This law also provided that persons having silver could not have it made into the small coins at their request, but that the government should buy silver for the coinage of these silver pieces. Bullion owners thus sold their silver to the government rather than asked to have it made into silver dollars. In this way they gained two or three cents per ounce of silver. However, a few silver dollars were coined, during the 1850's and 1860's. The yearly average was approximately 100,000. This was only a little over 5 per cent of the total silver coinage during this time. Further, the silver dollars that were made were, seemingly, all used in trade with the Far East. The silver dollar was of no significance in our monetary system at this time.

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[1] Report of the Director of the Mint, 1900, p. 207.

The Monetary Legislation of 1873. — In the late 1860's a congressional committee began the consideration of the revision of our coinage laws. The bill as drawn did not mention the silver dollar. It was not in the list of coins which were to be made at the request of an owner of bullion. Only gold coins were on this list, with the exception of a "trade dollar," to contain 420 grains of silver (nine-tenths fine), which was provided for the use of foreign traders in the Far East. The bill became a law in 1873. The bimetallic standard which had been provided in 1792, and continued at an altered ratio in 1834 and 1837 was thus replaced by the single gold standard, with the exception that the free coinage of the trade dollar was permitted, but it was not to be legal tender in sums exceeding $5. In 1876, the free coinage of this coin was prohibited and in 1887 its coinage even at the discretion of the Secretary of the Treasury was discontinued.

This gold standard legislation was in line with the recommendation of an international monetary conference, at which our country was represented, which met at Paris in 1867, and with the legislation of Great Britain and the European countries.

The new coinage law occasioned no comment. While the system of bimetallism had been the law of the land since the beginning of our national history, actually the gold standard had prevailed for many decades, except that the issues of greenbacks had temporarily made paper money the standard money. Silver, in 1870, was in effect not a money metal, save as it was used in the light weight coins of small denomination. But hardly had the law of 1873 gone into effect when silver money assumed a significance which no one had anticipated, as a result of two important changes: a fall in the prices of commodities and a decline in the price of silver.

Prices of commodities fell sharply from 1874 to 1879, as is indicated in the chart above. The price of 371.25 grains of pure silver, the content of a silver dollar, fell from slightly more than a dollar in 1873 to 89 cents in 1878. The decline in the price of silver was due in part to the great increase in the yearly output of silver as shown in Table 16, and to the cessation of silver coinage at this time by Germany, France, and other European countries.

The Bland-Allison Act of 1878. — The groups that were suffering from the decline in prices at once looked to the money system and sought for means to increase the supply of money and check the fall in prices. They at once became painfully aware of what had happened in 1873. Silver was now available in large quantities at a price that would have made its coinage very profitable, but the mints were closed against it. Demands were at once made that the legislation of 1873 be repealed. This could not be accomplished, but a compromise bill was passed in 1878. This was called the Bland-Allison Act. It directed the Secretary of the Treasury to purchase not less than $2,000,000, nor more than $4,000,000 worth of silver each month and coin it into silver dollars. Only the minimum amount was purchased under this act which continued in operation until 1890. As the silver in a dollar was worth less than a dollar, the amount of silver purchased each month could be coined into more than $2,000,000. The average monthly coinage was about $2,500,000, or $30,000,000 per year. The total coinage under the act amounted to approximately $352,000,000. Silver certificates were issued against most of this money and paid out by the government, as the public did not like to use the heavy silver dollars.

The Silver Purchase Act of 1890. — The proponents of silver money, among whom the owners of silver mines must be reckoned, were not satisfied with the amount of silver that was being added to the money stock of the country. In 1890, the law of 1878 was repealed and a new one, called the Sherman Silver Purchase Act,[1] was passed, providing for the purchase each month of 4,500,000 ounces of silver. The silver was to be paid for with treasury notes which the government was to issue for this purpose. Some of the silver was to be coined into dollars and used for the redemption of the notes. This act was repealed in 1893. Under its operation some $218,000,000 dollars were added to the money of the country.

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[1] Senator John Sherman, whose name was attached to the bill, was not, however, its author.

The events of our monetary history are closely related to the trade and monetary conditions of foreign countries as implied above. In 1880, for example, the plan to redeem the greenbacks in gold, which went into operation the year before, was rendered highly successful because our harvests of that year were very abundant, whereas the crops of England and Europe were almost total failures. The sale of American grain abroad at high prices led to the importation of gold and solved the problem that confronted the treasury.

In 1893, there was a severe financial failure in England as a result of the failure of investments that had been made in South America. English bankers sold in our markets large blocks of securities, in order to raise money. This called for exports of gold from New York. Bankers who wished gold for export turned to the national treasury for it, and presented paper money for redemption. This raised the question as to whether the government would be able to maintain gold redemption of the treasury notes which were being paid out each month for silver under the law of 1890. The fear that the government might be unable to continue gold redemption — that we should be forced off the gold standard — led to further sales of securities by foreign holders, because the holders of securities that were issued by American corporations and payable in American dollars, were in danger of being paid in silver money. The sale of such securities in our markets by foreigners further increased the demand for gold for export, and weakened the position of the treasury. President Cleveland accordingly called Congress into special session and insisted upon the repeal of the Silver Purchase Act of 1890, which was responsible for the augmentation of our paper money each month. The repeal bill was passed in November, 1893.

The Industrial Depression of 1893–1896. — There was a severe financial panic in New York during the spring of 1893, and a period of marked industrial depression set in. Prices fell sharply. Unemployment was pronounced. Farm prices fell to very low levels. Potatoes sold as low as 5 cents a bushel in the farming sections of the West during the spring of 1896, and corn at 15 cents a bushel. As a result of this situation, the money question, as noted above, was the issue of the political campaign of that year. The Democrats under the leadership of Bryan demanded "the free and unlimited coinage of both gold and silver at the ratio of 16 to 1." The Republicans nominated McKinley on a platform which declared for bimetallism by international agreement, and for the gold standard pending such agreement. As no one thought that there was any likelihood of an agreement among the leading nations to adopt bimetallism, the issue was joined as between bimetallism and the gold standard. The contest was a very bitter one. McKinley was elected by a narrow majority.

As already noted, prices began to rise in 1897, undoubtedly largely because of the increased production of gold which had begun about 1890. During the next five years, prices increased by almost one-third, and in the subsequent years they continued to rise. This meant that the money question, which had been in the center of the political stage for a quarter of a century, was no longer of dominant interest.

If the Bimetallists Had Been Successful in 1896. — If the bimetallists had been successful in the election of 1896, and upon taking power in 1897, had provided for bimetallism at the ratio of 16 to 1, our money standard would have been the silver dollar. Both gold money and the silver dollar would not have been standards, as the bimetallists had contended. 371.25 grains of pure silver was worth about 50 cents in 1896. Since our money standard was the gold dollar, 50 cents was the value of the content of a silver dollar measured in gold. To have provided that this much silver could be freely coined into dollars, would have meant that this quantity of silver would have been worth a dollar, or more briefly, it would have been a dollar. Gold money would then have been priced in silver money. A ten dollar gold piece would have been worth about $20, in silver. The prices of commodities would have risen at once. Debts that were payable simply in dollars could have been paid in silver dollars, or in about half as many goods as would have been required in 1896. Indeed, the fear that this might come to pass caused a great many persons who loaned money or made long term contracts during this period of the agitation of the silver question to provide that payment should be made in "gold dollars of the present weight and fineness." But the debts that were not expressly payable in gold could have been paid in silver, just as it was possible to use greenbacks for this purpose during the period that they were, in effect, our standard money. Bimetallism would thus have meant a partial cancellation, or repudiation, of debts.

Further, if the silver standard had been established, we should undoubtedly have found that it would have greatly hampered our foreign trade relations. The other leading commercial nations used gold as the standard money. It was (and is) the international money. Under the silver standard our prices would have been set in silver, and, presumably, stocks and bonds would have run in terms of silver dollars. The necessity of translating our prices into gold prices for the purpose of foreign selling or buying — and foreign loaning or borrowing — would have checked our international dealings. New adjustments would have been required at every change in the price of silver in the world's markets.

The Gold Standard Legislation of 1900. — The legislation of 1873 provided in effect for the gold standard, and following this the national treasury was administered in such a way that the gold standard was maintained. That is, silver certificates and the treasury notes of 1890 were redeemed in gold, and thus kept equal in value to gold. The law, however, did not require that this be done. This paper money was under the law redeemable in silver. Further, the treasury was not required by law to redeem silver money in gold. Our gold standard thus depended on the fact that silver could not be freely coined, and upon the inclination of the treasury officials to redeem all money in gold.

Following the defeat of bimetallism in 1896, the advocates of the gold standard wished to have gold definitely established as the standard. This was done in 1900. The gold dollar was declared to be the standard unit of value and the Secretary of the Treasury was directed to maintain at a parity with gold all forms of money issued or coined by the United States. That is, the treasury was required to redeem all money in gold, dollar for dollar. It was further provided that a reserve of $150,000,000 in gold should be maintained for the purpose of redeeming the greenbacks and the treasury notes of 1890.

Bimetallism. — Bimetallism is in no sense an issue to-day. But from the point of view of abstract monetary theory, the subject is very interesting. The advantage that was claimed for bimetallism was that it gave a wider base to the money system than did either gold or silver if used alone, and that as a result of this the value of money would be more stable under bimetallism than under monometallism. In other words, it was claimed that the prices of all commodities taken together would fluctuate less under a system using the two metals than under a system that used but one of them. For example, if the money stock consisted of two million dollars in gold and a like sum in silver, the addition of one-quarter million in either gold or silver would affect the value of money less than if only that one metal were being used as money. And likewise, a reduction in the yearly output of a metal would affect the total supply less, if the volume of standard money were large due to the use of the two metals than if it were small as a result of using only the one metal.

The possibility of changes in the yearly production of one or the other of the two money metals, and, as well, changes in the demand for either of them in the arts, indicates the inherent weakness of bimetallism. If a bimetallic standard is established at the ratio of 16 to 1 — if the silver in a dollar is sixteen times as large a quantity as the gold per dollar in gold coins — it is practically impossible to maintain bimetallism if the value of an ounce of silver and of an ounce of gold becomes other than as 16 is to 1. If under a coinage ratio of 16 to 1, silver should fall in value relatively to gold (or gold rise relatively to silver) so that an ounce of gold could be exchanged for 18 ounces of silver, this would mean that 10 silver dollars would be worth less than a gold eagle. Persons who had debts to pay would tend to pay in silver rather than gold. Gold would not be used as money but as a commodity. Silver would be the actual standard. Similarily, if gold fell in value so that a gold eagle would exchange for only nine silver dollars, silver would not be used as money. The standard money would be gold. Any fluctuation in the relative value of silver and gold under bimetallism thus tends to make one of them the standard. The standard coin will be the one which is the cheaper of the two.

International Bimetallism. — But would the relative value of silver and gold change from time to time if both were standard money? The answer seems to depend upon whether one country or all countries are considered. If the United States should have a bimetallic standard, and all of the other leading countries the single gold standard, it is possible that the people of the other nations might on account of some unusual demand for silver bid up its price so high that we should export silver and thus cease using it as money. This would not be alarming as we should then have the same money standard that prevails in the other countries, namely, gold.

But might we be forced on to the silver standard? This would happen if the price of silver should fall so low (or gold should rise so high) that silver coins would be worth less than gold coins. Then gold would not be used as money, but would be exported. A London trader, for example, might exchange an ounce of gold for 17 ounces of silver (assume our ratio to be 16 to 1) and send the silver to this country for coinage. With the silver dollars he could then buy gold and have it shipped to London to be exchanged for more silver. Thus our gold would be exported and silver would be our standard money.

However, if both gold and silver could be freely coined at the ratio of, say, 16 to 1, in all of the leading countries then there would be no point to buying silver abroad and shipping it to the United States for coinage. Silver would not flow to the mints of this country from other countries in exchange for the gold of this country since it could be coined at equal advantage in any country. Hence, if the mints of all countries are open to the unlimited (free) coinage of both metals there would not be any forces operating to expel one metal from a country and leave the other as standard. International bimetallism could, it would seem, be maintained. Perhaps the reservation should be made that a very large increase in the supply of one metal relatively to the supply of the other might make it impossible to maintain international bimetallism. It would, however, take an almost impossible quantity of one of the metals to cause its value under international bimetallism to fall below its coinage value in terms of the other money.

But the gold standard is now definitely established in all of the leading nations. Whatever the possibility of actually maintaining international bimetallism, it would not be desirable to substitute it for the present system, and any proposal that this be done would not have the remotest chance of being accepted.

The Value of Gold. — It is perhaps well to call attention at this place to the unstable value of gold during the past seventy years. This has already been emphasized for the thirty-six-year period following the Civil War. During these years, the value of gold rose — prices fell. Since 1897, the value of gold has fallen — prices have risen, except for the past five or six years. Thus gold has not proved to be an ideal monetary standard. Perhaps we shall be able in the future to control the movement of prices under the gold standard by regulating the amount of bank credit. That is, the difficulty of the past may have been due to the lack of proper control over the banking system. This will be made clearer by the discussion of our banking system which appears in the following chapter.

PROBLEMS AND EXERCISES

341. Why might it have been better to have financed the Civil War by means of a vigorous policy of taxation rather than by means of the issue of greenbacks?

342. It has been estimated that the use of greenbacks increased the cost of the Civil War to the government by $600,000,000. How can this have been?

343. Note some of the probable consequences if our government had sought to finance the late war by issuing paper money.

344. Account briefly for the increase in the purchasing power of gold from about 1866 to about 1896.

345. How did the increase in production during the seventies and eighties affect the money question?

346. If the monetary bill enacted into law in 1873, after having been considered for three or four years, had been held over for another similar period is it likely that it would have been enacted then? Why? If it had not, how would our history have been altered?

347. Show how the discussion relative to the financial failure in England in 1893 and the resulting effect in this country is related to the discussion in Chapter XXVI that concerns the maintenance of the gold standard.

348. What would have been your attititude in the presidential campaign of 1896 from the standpoint of your own pecuniary interest:

(*a*) If you had been a widow living on the income from $20,000?

(*b*) If you had been an Iowa farmer with a $5000 mortgage on your farm?

(*c*) If you had owned a grocery store in a silver mining town?

(*d*) If you had been director of a New York City bank?

(*e*) If you had contracted to work from 1895 to 1905 for a business concern at a fixed income of $10,000 per year?

Explain briefly.

349. In 1896 the market ratio of gold to silver was 30 : 1. If Bryan had been successful in the presidential election and if bimetallism had been provided for at the ratio of 16 : 1, what would have been the effect on our monetary system? Why? On the price level? Why?

350. If under a bimetallic system the relative weights of a silver dollar and a gold dollar are as sixteen to one (16 : 1) while the relative values are as fifteen is to one (15 : 1), which coin will be used in debt payments? Why? Answer similar questions if the relative values were as 17 : 1.

351. What advantages did the advocates of bimetallism claim for that system as compared with gold monometallism? Explain.

352. How does international bimetallism differ from bimetallism in one given country? What are the possible merits of international bimetallism as contrasted with national bimetallism?

CHAPTER XXX

AMERICAN BANKING SINCE THE CIVIL WAR

I. THE NATIONAL BANKING SYSTEM

The National Banking System. — The most marked defect in our monetary system during the period that was reviewed in the preceding chapter was the lack of an adequate system of banking. Indeed, this is equally true of the pre-Civil War period, with the exception of the two twenty-year periods of the first and second United States banks. Secretary Chase recommended to Congress at the beginning of the Civil War that provision be made for national banks. If this had been done, and if adequate provisions for note issue had been made, it is possible that we might have been spared the greenbacks, and, also, that the price decline of the years just reviewed might have been much less.

Congress passed the National Bank Act in 1863. The system that was thereby provided continued almost unchanged until the Federal Reserve Banking System went into operation in 1914. But it was far from being an ideal system. One of the objects sought by the men responsible for the system was to strengthen the market for government bonds. Another object was to provide a substitute for the state bank notes, the undesirable character of which, in the newer sections of the country, has been noted above. Both of these results were secured by the provisions: (1) that national banks could be organized only after the purchase of a given quantity of United States bonds, depending upon the size of the bank, and (2) that such banks might issue notes only upon the deposit of United States bonds with the Secretary of the Treasury.

The notes of state banks were in effect prohibited by laws passed in 1865 and 1866 that imposed a tax of 10 per cent upon such notes whenever they were paid out by a bank or used as money by any person. The state bank notes then disappeared from circulation. In 1863 such notes had reached a total of over $239,000,000. The new national bank notes amounted to nearly $300,000,000 in 1867, but did not exceed that figure until 1872.

Safety of the National Bank Notes. — The national bank notes had one great merit as compared with the state bank notes — they were absolutely safe. They were obligations of the United States government as well as of the issuing banks. The Secretary of the Treasury was required to redeem them whenever they were presented, and then to collect from the bank or banks that had issued the notes the sum that he had paid out for their redemption. The government's security in this operation consisted of bonds, which it had issued, and which were owned by the bank and deposited with the Secretary of the Treasury as security for the note issue. A bank was also required, after 1874, to deposit an amount of lawful money with the Secretary equal to 5 per cent of the notes which it wished to issue. And, further, the government had a first lien against the assets of a bank until the notes were redeemed. Thus the failure of a national bank could not lead to any loss to the persons who happened to have its notes, so long as the government itself was able to meet its obligations.

The above discussion has been conducted in the past tense, but national bank notes are still part of our money supply, and the principal conditions of their issue remain unchanged. But this kind of money has been superseded in importance by the Federal Reserve notes, which will be described later. Since the national bank notes are no longer of much significance in our money system the discussion will be continued in the past tense.

Inelasticity of Notes. — But while the national bank notes were safe beyond question they were entirely, or almost entirely, lacking in what is called *elasticity.* They were in this respect very inferior to the state bank notes that had preceded them, and to the Federal Reserve notes which we have now. The state banks, as has been explained above, issued their notes in response to the demand of customers just as banks give checking accounts to-day. Under the direction of conservative bank managers, such notes were safe and they were ideally elastic. When the business men of a community needed money they asked for loans at a bank or offered to sell to it commercial paper, and the banker, if he was satisfied with the security offered and had sufficient reserve for redemption, gave out his notes. Later as the needs of the business men declined, the notes found their way to the bank and were redeemed and retired from circulation. Thus it was possible to adjust the money supply to the monetary needs of the country. But the volume of national bank notes was not thus adjustable to the needs of trade. The issue of these notes depended more upon the price of bonds — and thus the interest to be made thereon — than upon the need of the country for money. Then, too, of course, the volume of bonds conditioned the volume of notes. Thus the action of the government in the late eighties and early nineties in purchasing its outstanding bonds — in paying off the public debt — greatly reduced the bank note circulation. Within five years, bonds to the amount of $500,000,000 were retired, and the resulting decrease in bank notes meant a curtailment of 7 per cent per year in the money in circulation, at a time when there was apparently a need for an increase in the volume of money.

The volume of bank notes, to repeat, did not vary with the volume of business that was to be transacted. There was not an expansion of note issue during periods of prosperity and a contraction when business was dull; nor an expansion during the autumn, when the harvesting and marketing of the agricultural crops called for an increase in the volume of money, and a reduction so soon as this seasonal demand was replaced by a lessened demand during the winter, spring, and summer. This lack of elasticity in our bank notes was a grave defect in our banking system and thus in the monetary system.

Bank Deposits Accumulated in the East. — During the period of crop harvests, the farmers of the country needed money in order to employ extra labor, and grain dealers in turn needed money in order to make purchases from the farmers. During the decades that are now being considered, farmers made but little use of checking accounts and so cash rather than checking accounts was demanded of the local banks. These banks then called for cash from the banks in the larger cities. But within a few months the money thus paid out to the farmers — or loaned to them — was returned in the course of business to the local banks, and they sent it to the larger cities in order to pay off their loans or to earn interest on it as deposits. Finally, as a result of a series of redeposits, much of this money found its way to the banks in New York City. These banks were then well supplied with money and offered it for loan at low rates of interest. But in the fall of the year, the banks in the interior asked for cash and the banks in New York City and other large commercial centers were forced to "call" their loans, and refuse to make additional ones except at high rates of interest. These alternating periods of an abundance and a scarcity of money were very disturbing to business. If the volume of money could have been extended in the fall of the year during the movement of the crops and then contracted, as under the usual system of bank note issue, business affairs could have been kept on a more even keel. This defect in our banking system was more serious during the period now being considered — the last half of the past century — than it would be to-day. Not only does the farming community use checks more largely now than it did then, but the business of farming was then of greater relative importance in the economic life of the nation than it is to-day.

Money Panics. — But entirely aside from the failure of the national banking system to provide adequately for the annual crop movement, the lack of elasticity in note issue was a serious factor in relation to the money panics or financial crises that occurred about once every decade during this half century. As a period of prosperity continued, business men made commitments which normally resulted (as is true to-day) in a long series of debts. A owed B, B owed C, C owed D, etc. If business began to get poor, and if failures took place, business men became clamorous for payment of the debts due them, that they might meet their obligations. The normal recourse at such a time is to the banks. But during this period, the banks were often unable to extend loans. If their deposits had already reached the legal limit in proportion to their reserves, they were unable to extend further accommodations to business men, regardless of how excellent may have been the security offered for the loans. Further, in such a time, cash rather than checking accounts was desired and the banks were unable to create cash by issuing notes, except as they purchased United States bonds for this purpose. This, of course, would not have improved the position of any one bank, although it would have augmented the volume of money in the country. Then too, some thirty days were required to complete such a transaction, and promptness in issuing bank notes in times of stress is invaluable. Our banks were thus unable to overcome a general demand for cash by increasing the amount of it.

There was a tendency, too, at such a time for banks to embarrass each other through withdrawals of cash. No banks in the system had sufficient reserves so that they could come to the aid of the other banks. Each bank looking to its own cash reserves sought to augment its own holdings by withdrawing money from other banks. Such conduct caused a dispersion of cash reserves among many banks, whereas, in order that the cash might have been used most effectively, it should have been concentrated in a few banks.

At times, the demand for money became so urgent that a money panic resulted. Business men with good assets were forced into failure because of inability to get cash with which to meet their obligations; the prices of securities were driven down in order to get money; and banks as well as business houses were forced into bankruptcy. Finally, after repeated occurrences of this kind, the panic of 1907 focused attention on the problem and led to a movement looking toward the reform of our banking system. Late in 1913 the law was passed which established the Federal Reserve System. This system, as will be explained later, makes a money panic seemingly impossible.

Deposit Banking. — The use of bank checks increased considerably during the half century that is under review. As already indicated, the terms *deposit banking* and *deposit currency* are often used to indicate the use of checks. The volume of checks that is used cannot be determined accurately from the reports of banks as to the amount of their deposits. Savings accounts are not subject to check, and what is of more significance, the record of the amount of "money" on deposit at any one time during a year, or the average amount on deposit during a year, does not indicate how often such a volume of deposits is used during a twelve-month period. A merchant may maintain an average daily balance of, say, $5000 and write checks amounting to $250,000 against his account during the course of the year. In such a case, the turnover or velocity of the deposit or checking account is fifty times per year. But although the velocity of deposits is in no way indicated by the record of deposits, a change in the volume of deposits indicates a change in the amount of checking, if there is no reason to assume that the rate of turnover or velocity of deposits has been altered.

The following table gives data for deposits in all banks and trust companies for selected years, and the circulation, or notes outstanding, of national banks.

TABLE 19

CIRCULATION AND DEPOSITS OF NATIONAL, STATE, SAVINGS, AND PRIVATE BANKS, LOAN AND TRUST COMPANIES[1]

(IN MILLIONS OF DOLLARS)

Year	*Circulation*	*U. S. Deposits*	*Individual Deposits*	*Total Deposits*
1865	$131.5	$58.0	$ 640.0	$ 698.0
1870	291.8	13.2	1,051.3	1,064.5
1875	318.8	10.2	1,787.0	1,797.2
1880	318.4	10.7	1,951.6	1,962.3
1885	269.2	14.0	2,734.3	2,748.3
1890	126.5	30.6	4,062.5	4,093.1
1895	178.8	13.8	4,921.3	4,934.5
1900	265.3	98.9	7,238.9	7,337.8

[1] Spahr, *op. cit.*, p. 84. See footnote in Spahr for discussion of discrepancies between these and other similar data given by other writers.

These data indicate a great growth in the use of bank checks during this period. The total deposits increased more than tenfold while the population of the country was only two and one-fourth times as large at the close of this period as at the beginning. Professor Fisher has concluded that the velocity of deposits increased from 36.6 per year in 1896 to 52.8 per year in 1909.[1] This suggests that the velocity of deposits increased during the years covered in the table and thus that the amount of money paid by bank checks increased considerably more than ten times during these thirty-five years.

The table also gives statistical verification to the point made above relative to the national bank note currency. Its volume during these years did not keep pace with the use of deposits nor with the population of the country. Indeed, the amount of bank notes outstanding in 1880 was over two and one-half times the amount outstanding ten years later. This was undoubtedly a factor in causing the decline in prices during this period.

It is interesting to speculate as to whether it might not have been better not to have provided for the national banking system with the note issue mechanism that accompanied it, and to have permitted the state banks to continue issuing notes on the old basis. To be sure, the "wild-cat" banking was deplorable, but the central section of the country would undoubtedly not have failed to correct this condition in due time. The New England banks were put on a sound basis as early as the close of the first decade of the century and the banks of the other early-settled regions shortly thereafter. If we can assume that the central states could have worked out a system of banking comparable to the Suffolk system of New England, it seems reasonable to conclude that the country would have been better off in the last half of the past century without the National Banking System. Note issue would have been elastic — the many money panics might have been avoided — and the needs of the growing country for circulating media might have been so much better supplied that the price decline would not have been so marked.

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[1] *Purchasing Power of Money*, 1911, p. 304; Spahr, *op. cit.*, p. 91.

Difficult as it is to predict what might have been under different conditions, there can be no question that the note issue plan of the national banking system was very poor.

II. The Federal Reserve System

The National Monetary Commission. — A National Monetary Commission was created by Congress, shortly after the panic of 1907, to study the subject of banking reform. This committee made an elaborate report after four years of study. In describing our national banking system, it listed seventeen defects, the most important of which may be summarized as follows:

1. There was no elasticity in the reserve requirements of the banks.
2. There was no elasticity in the note issue.
3. There was no provision for coöperation among the different banks in times of stress.

As a remedy for these defects in the system, and for others which the Commission noted, it was proposed to establish a central bank somewhat after the plan of the two United States banks which were in operation from 1791 to 1811 and from 1816 to 1836 respectively.

The Federal Reserve Act. — The idea of a central bank met with vigorous opposition. It was declared that such an institution was not in harmony with our domestic traditions — that it would amount to the establishment of a financial oligarchy. These sentiments were especially strong in the Democratic party, which came to power in 1913 under the leadership of Woodrow Wilson. During the first year of the Wilson administration, the Federal Reserve Act was passed and the new banking system was inaugurated in the autumn of 1914. This is a decentralized system with a high degree of centralized control, and it is believed by most students of banking to be admirably adapted to the needs of our country. Its leading features and the provisions whereby the principal defects of the old national banking system are overcome will now be given.

The Federal Reserve Banks and Member Banks. — The country is divided into twelve districts in each of which a Federal

Reserve Bank is located. The following cities are the seats of these banks, the districts being numbered consecutively from one to twelve: Boston, New York, Philadelphia, Cleveland, Richmond, Atlanta, Chicago, St. Louis, Minneapolis, Kansas City, Dallas, and San Francisco. These banks were financed by money furnished by the national banks. Each national bank was required to subscribe to the stock of the Federal Reserve Bank in its district, an amount equal to 6 per cent of its paid-up capital and surplus. Any national bank had the option of refusing to do this under the penalty of giving up its charter. Almost all of the national banks joined the system and thus became member banks. Many state banks have also become members but have retained their state charters.

The Federal Reserve banks are bankers' banks. They carry on a banking business with the member banks, not with individuals, except that they may deal with anyone in buying or selling commercial paper, or gold, on the open market. Each member bank must maintain a balance, a deposit, with the Federal Reserve Bank of its district equal to 13, 10, or 7 per cent of the demand deposits and 3 per cent of the time deposits which it holds for its customers. Banks that are located in New York and Chicago are subject to the 13 per cent requirement in respect to their demand deposits; those that are in the other principal cities are subject to the 10 per cent requirement; and those in smaller places, to the 7 per cent requirement. The two cities named are in this classification called central reserve cities; cities in the second group (63 at the present time) are called reserve cities; and banks in smaller places are said to be country banks. The term "reserve" in this connection is somewhat confusing. It should be noted that it was thus used before the inauguration of the Federal Reserve System, and has no relation to the new system, except to designate these two groups of cities for this purpose. In order that they may reduce the size of the balance which they must keep with the reserve banks, many member banks have adopted the policy of encouraging their customers to transfer a portion of their demand deposits into time deposits. Thus a customer who maintains a large balance in his checking account may be asked to place some of this in a savings account, on the implied promise that the bank will pay any amount of this on demand, but with the stipulation that the bank is not legally obliged to pay until 30 days after request for payment is made.

No requirement is imposed upon the member banks in regard to the amount of cash that they must keep in their own vaults. In other words, no national bank keeps any of its legal reserves in its own vaults. Their legal reserves, to repeat, are all kept in the Federal Reserve banks and are really demand deposits. State banks that are members of the Federal Reserve System must comply with the reserve requirements of the national banks which have just been noted. In some of the states, the law provides that if a state bank is a member of the Federal Reserve System it need comply only with the reserve requirements of the system, but in some states other reserve requirements are imposed upon the state banks, as, for example, that they shall maintain a cash reserve in their own vaults equal to a certain percentage of their deposits.

A national bank in Columbus, Ohio, must keep a deposit account with the Federal Reserve Bank in Cleveland equal to 10 per cent of its demand obligations, and 3 per cent of its time deposits. Suppose that the demand deposits to the credit of its customers amount to $800,000 and its time deposits to $100,000. It must then have $83,000 to its credit on the books of the Cleveland Federal Reserve Bank. If its balance with the reserve bank is approximately this figure, it will be necessary for it to increase this balance before it may extend additional credit to its customers. The balance may be increased by sending cash or checks on other banks to the reserve bank, or by selling it securities or commercial paper and accepting credit in payment, or by direct borrowing from it by the member bank. The sale of commercial paper in this way is usually spoken of as a rediscount, since a bank would have discounted such paper when it took it (bought it) from its customers. The rate at which the reserve banks will rediscount the commercial paper of member banks is an important factor in determining the policy of the member banks relative to the extension of credit to customers, as has been noted earlier.

Member banks and the reserve banks are also closely related in respect to cash. If a member bank wishes an additional amount of cash it gets it from the reserve bank by selling commercial paper to it or by drawing on its balance with the reserve bank if it has a sufficient balance to permit this being done. Further, a member bank sends its worn and mutilated paper money to the reserve bank in exchange for new money or for credit. The reserve bank pays shipping costs on money both ways. The limitations within which a Federal Reserve Bank may extend credit to the member banks or furnish them with cash in the form of federal reserve notes will be discussed presently.

The Federal Reserve Board. — The activities of the twelve Federal Reserve banks are closely correlated by the Federal Reserve Board. This gives a high degree of centralization to the entire banking system. This Board is composed of eight members. Two of these are the Secretary of the Treasury and the Comptroller of the Currency. The other six members are appointed by the President for a period of ten years. Their terms of office are arranged to terminate at different times. No two of these six members may be appointed from any one Federal Reserve district. The Board sits in Washington.

The Directors of the Federal Reserve Banks. — Each Federal Reserve Bank has a Board of nine directors. The member banks in each district choose six of these directors and the Federal Reserve Board appoints the other three. One of these three is designated the Federal Reserve Agent. He has special duties in respect to the issuance of federal reserve notes and in other ways is the special representative of the Federal Reserve Board. In the election of the six directors, the member banks are divided into three groups on the basis of their size. One group is composed of the large banks, one of the medium sized banks, and one of the small banks. Each group elects two directors, one of whom must be a banker, and one must be engaged in some business other than banking. In this way the small banks have equal power with the large ones and business interests are given representation.

The Federal Advisory Council. — The Federal Advisory Council is composed of twelve members, one from each district. They are elected annually by the board of directors of the respective Federal Reserve banks. This Council meets at least four times each year in Washington, and oftener if called by the Federal Reserve Board. The purpose of this Council is to give the Federal Reserve Board the benefit of the advice and judgment of persons who are not directly connected with the system. The Council has power to make oral or written representation to the Board, and to ask for information in regard to the policies of the Board. It has thus far been of but very little importance.

The Reserves Against Members' Balances. — The law provides that the Federal Reserve banks must maintain a reserve of gold or lawful money equal to 35 per cent of the amount of their demand deposits. The deposits in these banks consist largely of the balances held therein by the member banks. In addition to such deposits, the reserve banks hold surplus funds of the United States government and funds for foreign banks. A few non-member banks also keep balances in the reserve banks. But, to repeat, the balances of the member banks account for most of the deposits in the reserve banks. For example, on February 29, 1928, the total deposits in the twelve reserve banks amounted to $2,425,605,000 and the balances of the member banks made up $2,374,515,000 of this total.

The 35 per cent reserve requirement means that the total deposits in a Federal Reserve bank may not be more than two and six-sevenths times the amount of gold or lawful money that the reserve bank holds against its deposits. The reserve banks are thus limited in the amount of credit that they may grant to the member banks, and, as noted above, the amount of credit that the member banks may extend to their customers is limited by the balances which they have with the Federal Reserve banks. However, and this is a marked feature as compared with the reserve requirements under the National Banking System, the Federal Reserve Board has power to suspend, in times of emergency, this 35 per cent reserve requirement which is imposed upon the reserve banks. Thus if there are signs that there is danger of a money panic, and if member banks are desirous of extending credit in order to enable business men to meet their obligations and thus escape failure, the Board may permit the reserve banks to extend credit to the member banks in excess of two and six-sevenths times their reserves against deposits. This provision has never been utilized. It is, however, a very salutary provision. It permits a reserve elasticity, the lack of which, as pointed out by the Monetary Commission, was one of the chief defects of the old system.

Aside from the elasticity in the reserve requirement for the balances of member banks, there is marked elasticity in the volume of such balances. That is, the volume of member balances in the reserve banks varies from time to time as the needs of business men for accommodation varies, or as the policy of the reserve banks or of the Federal Reserve Board makes it profitable to the member banks to enlarge or contract the volume of their balances. Thus if the Federal Reserve Board should decide that the rate of rediscount at the reserve banks should be advanced, this would make it less profitable for member banks to maintain large balances with the reserve banks, as it would mean that they would have to sell their commercial paper to the reserve banks at lower prices than formerly. A reduction in the discount rate would have just the opposite effect. Similarly, an increase in the demand of customers for loans would tend to cause member banks to increase their balances with the reserve banks in order that they might legally grant the loans that are requested, and a falling off in the demand for loans would prompt the member banks to reduce their balances.

Table 20 on a following page shows the variation in the volume of member banks' balances (deposits) in reserve banks for specified dates.

Federal Reserve Notes. — One of the significant provisions of the new system is that which concerns the issue of Federal Reserve notes. These notes, which are now the most prevalent form of paper money, are issued by the Federal Reserve banks.

Technically, they are issued by the Federal Reserve Board, through the Federal Reserve agents, to the Federal Reserve banks, and by them paid out in the course of business. They are issued on essentially the same principle as that upon which the state banks issued notes before the confiscatory tax legislation of 1865 and 1866. This principle, it will be recalled, is also followed by commercial banks in the extension of credit in the form of checking accounts. In effect the notes are issued when the Federal Reserve banks buy commercial paper from the member banks and pay for it with their own notes, and also when they exchange their notes for gold.

To describe the note issue process in greater detail, each Federal Reserve bank through its Federal Reserve agent orders from the Treasury Department notes of the denominations and in the quantity that it anticipates it will wish to issue. These new and unissued notes are lodged in a separate department of the bank under the supervision of the Federal Reserve agent. The Federal Reserve bank may issue such notes, that is, it may use them as money by following either of two plans. (1) It may transfer gold or gold certificates from the other departments of the bank to the one that is under the control of the Federal Reserve agent and receive an equal quantity of notes in exchange. These notes then become money and are so used by the bank in its business operations. In such a case, the notes are in effect gold certificates. They are issued on a 100 per cent gold reserve.

(2) The other method of issuing notes is to transfer to the Federal Reserve agent's department of the bank a given quantity of commercial paper, say $1000 worth, and an amount of gold equal to 40 per cent of the value of the paper ($400), and rereceive therefrom notes equal in amount to the value of the paper, $1000 in this case. But, if the Federal Reserve agent's department already has more than 40 per cent as much gold as there are reserve notes outstanding, it would not be necessary for the Federal Reserve banks to add gold to the commercial paper, for a Federal Reserve bank is not required to have a gold reserve with the Federal Reserve agent in excess of 40 per cent

of the notes that are outstanding, if the remaining 60 per cent is made up of commercial paper.

Suppose that a Federal Reserve bank has turned over to its Federal Reserve agent $100,000 in gold in exchange for $100,000 in Federal Reserve notes, and later desires to issue additional notes. Suppose further that this reserve bank has only the $100,000 in notes outstanding. The gold lodged with the Federal Reserve agent, $100,000, is sufficient reserve for the issue of $250,000 in notes as only 40 per cent gold reserve is required. Thus, in this case, $150,000 of additional notes may be issued without the transference of more gold to the Federal Reserve agent, but an equal value, whether in gold or commercial paper, must in every case be exchanged with the Federal Reserve agent for notes. Hence, in order to issue the additional $150,000 in notes, commercial paper equal to this amount must be transferred to this Federal Reserve agent's department of the bank. Thus, the $250,000 in notes would be secured by deposits with the Federal Reserve agent of $100,000 in gold (40 per cent) and $150,000 in commercial paper (60 per cent).

The Federal Reserve agent, however, does not retain all of the gold which is transferred to him. He is required to deposit with the Secretary of the Treasury an amount equal to 5 per cent of the amount which has been delivered to him by the bank. This becomes part of what is called the gold redemption fund which the Secretary of the Treasury maintains in order to redeem Federal Reserve notes as they may happen to be presented to the Treasury Department for redemption.

The total amount which a bank must maintain in the gold redemption fund is 5 per cent of the volume of Federal Reserve notes outstanding. Since the Federal Reserve agent deposits in this fund 5 per cent of the amount that he receives from the Federal Reserve bank (5 per cent of 40 per cent if he is given the minimum amount), his minimum deposit equals 2 per cent of the notes outstanding. Hence, the Federal Reserve bank must add to this deposit in the gold redemption fund, an amount equal to 3 per cent of the notes that are outstanding in order to make its total deposit in this fund at Washington equal to 5 per cent of its notes. This would make the total gold deposit on the part of the Federal Reserve bank equal to 43 per cent of the notes outstanding. Since the bank is permitted to count the amount which is to its credit in the gold redemption fund as part of the required 40 per cent gold reserve, it would then be permitted to issue a few more notes on the basis of the gold reserve built up in the case assumed. This would call for an additional deposit in the gold redemption fund, and would then permit the issue of a few more notes. Hence a minimum reserve of 40 per cent could only be approximately realized due to the method by which the 5 per cent gold redemption fund is built up.

When the commercial paper that has been given to the Federal Reserve agent in exchange for notes falls due, it is transferred to the other departments of the bank for collection, but other commercial paper or money must be substituted for it. Thus, if a Federal Reserve bank has on hand Federal Reserve notes which have been returned by member banks and if it is believed that these notes will not be needed soon as money, they may be returned to the Federal Reserve agent for cancellation and retirement from circulation, in exchange for commercial paper which he holds.

The commercial paper to which reference has been made so frequently in the above description originates, it should be noted, with the member banks. It consists of promises to pay on the part of customers of the member banks. These banks then sell it to the reserve banks (rediscount it) and then it may be used by the reserve bank as part of the basis for the issuance of Federal Reserve notes. The volume of Federal Reserve notes that may be issued is thus limited by the amount of gold and commercial paper which the reserve banks may have available for this purpose. The significant limitation in this particular consists of the gold requirement, as the only way in which the bank could be expected to consider the issuance of notes would be in exchange for commercial paper of equal value. The specified gold reserve is, as indicated, 40 per cent of the outstanding notes. But, as in the case of the reserve requirement against member balances in the reserve banks, provision is made for elasticity in the gold reserve requirement for Federal Reserve notes. The Federal Reserve Board may in an emergency lower the 40 per cent reserve requirement for a short period of time.

As is true of the power of the Board to reduce the requirement for reserves back of the member banks' balances, this power has never been exercised. In view of the present large reserves of gold in the Federal Reserve banks, there is no reason to expect that there will be need for the suspension of the reserve requirement at any time in the near future. But the provision that permits the temporary lowering of the reserve requirement is important. Money panics are best allayed or prevented by the free issuance of money. To have made it possible for a bank to exchange its high-grade commercial paper with the Federal Reserve bank of its district for cash, when cash is in great demand, is one of the signal merits of the Federal Reserve Act.

In addition to the elasticity in the reserve requirement, there is a high degree of elasticity in the issuance of Federal Reserve notes within the legal reserve. The volume of such notes tends to expand if there is a demand on the part of member banks for cash, and there is also a tendency for notes to be retired as the demand for cash falls off. There was some fear that the new notes would not be withdrawn from circulation after they were once emitted. In other words, it was feared that the notes might be elastic in expanding, but not in contracting. As a means of forcing the notes back to the issuing bank, it was provided that no one Federal Reserve bank might pay out the notes of any other Federal Reserve bank. Thus, if the Cleveland bank in the course of business comes into possession of notes that are issued by other reserve banks, it must send them to the respective banks for redemption and thus they are retired from circulation.

The short life of paper money is a factor of marked importance in the return aspect of elasticity. Member banks sort out the worn and soiled paper bills that they receive in the course of business and send them to the Federal Reserve banks. The inclusion of Federal Reserve notes in such money means that the notes are returned to the issuing bank and thus are in effect out of circulation until they are paid out again by the respective reserve banks.

The elasticity in the banking power of the Federal Reserve System, it should be emphasized, is found both in the field of member banks' balances and in cash. Ultimately this depends upon the desire of the customers of member banks for checking accounts or for cash. An increased volume of business may lead to an expansion of member banks' balances at the reserve banks rather than to an expansion in the volume of Federal Reserve notes. Normally, however, an increase in the checking accounts of customers of member banks calls for an increase in the volume of cash and thus an increase in member banks' balances tends to be accompanied by some increase in the volume of Federal Reserve notes.

The following table gives some of the significant data relative to the twelve Federal Reserve banks during the past nine years.

It will be noted that the banking power of the reserve banks was much more extended in 1919 and 1920 than during the

Table 20

CONDITION OF FEDERAL RESERVE BANKS FOR FEBRUARY, 1919–1928
(DAILY AVERAGES. AMOUNTS IN THOUSANDS OF DOLLARS)

February	*Total Earning Assets*[1]	*Total Cash Reserves*	*Total Deposits*	*Federal Reserve Notes in Circulation*	*Reserve Percentages*
1919	$2,225,686	$2,183,641	$1,855,124	$2,462,941	52.5[2]
1920	3,154,054	2,053,422	2,002,503	2,946,863	43.3[2]
1921	2,869,233	2,343,537	1,804,476	3,068,578	49.6[2]
1922	1,215,221	3,070,045	1,814,446	2,176,529	76.9
1923	1,152,862	3,208,682	1,969,757	2,244,733	76.1
1924	921,588	3,239,282	1,954,479	2,034,540	81.2
1925	1,050,323	3,041,913	2,233,531	1,714,929	77.0
1926	1,176,328	2,974,728	2,275,586	1,675,585	74.1
1927	1,005,923	3,137,737	2,266,460	1,704,703	79.0
1928	1,236,639	2,971,761	2,419,482	1,597,043	74.0

[1] Now termed "Reserve Bank Credit in Use."

[2] Calculated on basis of net deposits and Federal Reserve notes in circulation.

later years. This is indicated by the amount of earning assets, and also by the amount of deposits and the volume of notes. This extension of the banking facilities of the reserve banks came about because of the unusual demands for loans during the business boom that followed the termination of the war in 1918.

It is interesting to observe the relative changes in deposits as compared with the Federal Reserve notes during the past few years. While the volume of deposits has increased almost steadily, the number of Federal Reserve notes has declined. The change in the reserve percentage is also significant. This indicates the combined reserve actually held as a basis for deposits and notes. The minimum reserve percentage specified by law is, as already explained, 35 per cent for deposits and 40 per cent for notes. The combined minimum legal reserve percentage is thus 37.5 per cent if the amount of notes and deposits are equal.

Previously to March, 1921, net deposits rather than total deposits were counted in computing the actual reserve. Suppose that on a certain day in February, 1921, a member bank in Columbus had sent to the Federal Reserve Bank in Cleveland checks on other banks to the amount of $10,000. The deposits in the Cleveland Federal Reserve Bank to the credit of the Columbus bank would have increased by $10,000 — it would owe the Columbus bank $10,000 more than formerly. If these checks had been on member banks of the Cleveland bank it would have debited their accounts by $10,000 and so owed them less than formerly. Its deposits would not have been affected.

If the $10,000 in checks had been on banks in Chicago, the deposit of the Columbus bank — the deposits held by the Cleveland Federal Reserve Bank — would have been increased. But the Cleveland bank would then have had to collect this sum from the Chicago Federal Reserve Bank. It would owe the Columbus bank $10,000 more than formerly — its deposits (deposits with it) would have increased by $10,000 — but it must collect $10,000 from Chicago. Its net deposits — the net amount that it owed over the amount owed to it — would not have increased

In the combined statement of the twelve Federal Reserve banks for December 26, 1919, the following data are given:

Total (gross) deposits	$2,779,570,000
Uncollected items	1,075,100,000
Net deposits	1,704,470,000

If at this time, $850,000 in gold had been held as reserve against deposits the actual reserve percentage would have been 50 for *net* deposits but only a little over 30 for *total* deposits. Thus the new method (1921) of counting "deposits" gives a smaller reserve percentage for a given quantity of gold than did the former method. Thus the figures in the table — the actual reserve percentages for 1922 and 1928 inclusive — would have been larger than they are if the method of counting reserves had not been altered. Hence the change in the percentage reserve from 43 in February, 1920, to more than 70 for February of the more recent years is all the more striking.

Federal Reserve Bank Notes. — When the Federal Reserve Act was passed it was contemplated that the new bank notes provided for, the Federal Reserve notes, would entirely replace the national bank notes. It was not, however, desirable to do away at once with the national bank notes. The 2 per cent government bonds upon which these notes were largely issued were selling approximately at par because of the fact that they could be used as a basis for the issuance of bank notes. If the privilege of issuing notes upon such bonds had been taken away, the price of the bonds would have fallen sharply and the banks that owned them would have suffered considerable loss. It was accordingly provided that the banks might dispose of the bonds and thus retire the notes issued against them. One provision in this regard was that the banks might sell the bonds to the Federal Reserve banks. To guard the reserve banks against loss it was provided that the bonds so purchased might be used by the reserve banks as a basis for note issue. Notes which are issued in this way are called Federal Reserve Bank Notes.[1] Obviously these are to be sharply distinguished from the Federal Reserve Notes which have been discussed above.

Plans for the retirement of the bond-secured currency have not progressed as was anticipated. In December, 1913, there were over $756,000,000 of national bank notes outstanding. On December 31, 1927, the national bank notes amounted to over $619,000,000 and Federal Reserve bank notes to something over $4,000,000. However, some of the bonds that are used as a basis for this currency are to mature soon. The Treasury Department plans to pay them off, rather than renew them. Other bonds are callable at the option of the treasury and advantage may be taken of this provision, in order to still further reduce the volume of bonds that may be used as a basis for the bond secured currency. In this way this currency may finally be removed from our money system.

Clearing Through the Federal Reserve System. — In addition to the important services which have already been noted, the Federal Reserve banks perform the important function of acting as a clearing house for the banks of the different districts. Suppose that a bank in Columbus in the course of a day's business cashed checks which are written on banks in Chicago, and in a dozen different cities in Ohio. It will then send these checks to the reserve bank in Cleveland. The reserve bank will credit the account of the Columbus bank with the amount of these checks. Those that are drawn upon other member banks will be debited from the accounts of these member banks and the cancelled checks will be sent to them. The checks that are written upon the banks in Chicago will also be credited to the Columbus bank. The reserve bank in Cleveland will then look to the reserve bank in Chicago for the payment of the amount of these checks. The adjustment between the Cleveland Federal Reserve Bank and the Chicago Federal Reserve Bank will be made through the operation of the gold settlement fund that is held by the Federal Reserve Board in Washington. This is a fund of gold which is provided by the twelve Federal Reserve banks Thus if the Cleveland reserve bank in the course of a day's business receives from its member banks checks amounting to $800,000 on the member banks of the Chicago reserve bank it will, after having credited the accounts of its member banks with this amount, notify the Federal Reserve Board in Washington by telegram of its claim upon the Chicago bank and the Board will then transfer the right to $800,000 in gold from the Chicago bank to the Cleveland bank. The Cleveland bank will send the checks to the Chicago bank, and from there they will be sent to the various banks upon which they are drawn.

Clearing of out-of-town checks is not carried on exclusively through the Federal Reserve banks. A Columbus bank may arrange with a bank in Cleveland for the direct return to it of checks written by its customers which come to the given Cleveland bank. Hence, such checks would not be sent to the Cleveland Federal Reserve Bank. But any bank with which such arrangements had not been made would ordinarily send all out-of-town checks to the Federal Reserve bank.

Interbank Lending. — A further element in the centralization of the banking system is found in the power of the Federal Reserve Board to compel the federal reserve banks to loan to each other. As a result of this, any undue strain upon the resources of one or more of the twelve banks may be relieved by the help which certain of the others may be able to furnish. During the period 1918 to 1921 inclusive, this interbank borrowing amounted to approximately $8,000,000,000. Following this period the demands upon the banks decreased and no one of the banks has since been forced to call upon the other banks.

The Control of Credit. — The board of directors of each Federal Reserve bank determines and publishes, from time to time, the rate at which commercial paper will be rediscounted for the member banks. Any reduction in the rate increases the rate of profit that a member bank may realize by lending money to customers, as this reduces the cost of building up a balance with the reserve bank, which under the law is the basis for loans by member banks to customers. As stated in a previous chapter, member banks seldom alter their rates to their customers. Their change in policy is reflected in a greater or a lesser degree of liberality in granting loans to borrowers, as a result of a change in the rate at the reserve bank.

The Federal Reserve banks may also exercise control over the money system by "open market" transactions. If money is scarce, if prices are falling, the reserve banks may ease the situation by buying government bonds or commercial paper on the "open market" from banks and financial brokers. On the other hand, if money is plentiful, if prices are rising too rapidly, the reserve banks by selling bonds and commercial paper may draw money off the market into their vaults, and thus "stiffen" the money market. Authorities differ in regard to the extent to which the banks may thus exercise control, but it seems to be clear that within limits the Federal Reserve System has considerable power over the supply of our money through the control of the rediscount rate, and through open market transactions. This will be more fully discussed in the following chapter.

III. FARM LOANS ACTS

The Federal Farm Loan System. — The Federal Farm Loan System was established in 1916 for the purpose of making loans to farmers on their real estate. Its organization is somewhat similar to that of the Federal Reserve System. There are twelve federal land banks under the supervision of a Federal Farm Loan Board. National farm loan associations are provided to fill the place that member banks have in the Federal Reserve System. These associations are made up of borrowers who have borrowed money from the land banks. The act specified that $9,000,000 should be provided as the initial capital of the twelve land banks. Stock was to be offered to the public and any amount of the $9,000,000 that was not subscribed was to be furnished by the government. Additional capital is contributed by borrowers at the rate of $5 for each $100 which is borrowed.

A request for a loan is first presented to a local association and if approved it is then sent to the land bank of the respective district. If a loan is granted, the mortgage that is taken as security is then used as a basis for the issuance of bonds that are sold on the investment market. In this way the bank recovers the money that it advances to the farmer. In effect, the purchasers of the bonds furnish the money which is loaned to the farmer.

Joint-stock land banks are also part of the system. They receive their charters from the Federal Farm Loan Board and make loans on approximately the same terms as the federal land banks. These banks were provided as supplements to the federal land banks in the expectation that they would further increase the possibilities of farmers' being able to borrow without having to patronize private farm loan companies. On January 31, 1928, the farm loan banks had loans outstanding amounting to $1,158,717,000. The joint-stock land banks on the same date had outstanding loans amounting to $608,798,000.[1]

The Federal Intermediate Credit System. — The Federal Farm Loan System did not make provision for short term borrowing by farmers. Only long term loans on real estate may be made within that system. In 1923, the Agricultural Credits Act was passed to provide for short term loans. A federal intermediate bank was provided in each of the federal land bank cities. These banks do not loan directly to farmers. They loan directly to coöperating associations and indirectly to farmers through purchasing the notes which farmers have given to banks or associations in return for loans. The market that is thus provided for farm paper aids the farmers by making it possible for a bank or a credit association to grant a loan when it could not otherwise do so. In 1927, the loans of the intermediate banks amounted to $142,233,780, of which $54,991,394 was to coöperative marketing associations and $87,242,386 to agricultural credit associations, live stock loan companies, and banks.[2]

PROBLEMS AND EXERCISES

353. From the time of the Civil War until recently, banks could issue notes only upon United States government bonds.

(*a*) Point out one advantage of such a system.

(*b*) What must have been the chief disadvantage of the system?

(*c*) Is there any significance in the fact that there was a financial panic in 1907, and that this note-issue provision was temporarily amended to permit the issue of bank notes upon collateral other than United States bonds?

354. "The extensive use of checks made the note-issue provision of the National Banking System less disastrous to the country than it would otherwise have been." Explain.

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[1] Federal Reserve Bulletin, March, 1928, p. 223.

[2] Letter from Assistant Chief Examiner, Federal Farm Loan Board.

355. Outline the main features of a system of elastic bank note issue.

356. What is the significance of the provision allowing the Federal Reserve Board to suspend the 40 per cent reserve requirement for Federal Reserve notes and at the same time impose a tax upon the deficiency in the reserve? Of allowing a suspension of the 35 per cent reserve requirement?

357. Describe and illustrate the process by which (1) a commercial transaction in Columbus gives rise to 30-day commercial paper; (2) this paper comes into the possession of a local national bank; (3) this bank rediscounts the paper at the Cleveland Federal Reserve Bank; (4) the Federal Reserve bank sends Federal Reserve notes to the Columbus bank in payment; (5) the paper is taken up (paid) when due. How, if at all, will such payment affect the Federal Reserve bank if the Federal Reserve notes issued against the paper are outstanding at the time the paper is taken up? Explain.

358. If X wishes to borrow $4000 from the AB bank of Columbus and have same credited to his account, and if the bank has deposits equal to ten times its reserve account with the Federal Reserve bank in Cleveland, will the bank be able to accommodate him? If not, can the bank easily get in position to make the loan? Explain. What if the Cleveland bank holds deposits from member banks equal in amount to 2 6/7 times its reserve against deposits?

359. How does a Federal Reserve note differ from a Federal Reserve bank note? From a national bank note? What principles are involved in the issue of each of these notes? How may a Federal Reserve note be retired from circulation?

360. How does an alteration in the Federal Reserve bank discount rate control credit in the United States and thus tend to adjust the supply of credit to what is considered to be a safe demand?

361. What provisions of our banking system are designed to secure elasticity of our currency? What provisions are designed to achieve security of our credit currency?

362. "If banks can issue their own notes when called for at the counter, we can always have all the circulating medium we need. When trade is taking place, securities will be abundant and can be used as security for notes and when trade abates the notes will be deposited in the banks, returned to the issuing banks and be cancelled and retired."

(*a*) Do you believe such a system of note issue to be proper?

(*b*) Would it be well to limit this function to certain banks?

(*c*) What advantage might accrue from prohibiting banks from paying out the notes of other banks?

(*d*) In what way is our Federal Reserve System analogous to the system here suggested?

CHAPTER XXXI

MONEY AND PRICES

In a preceding chapter that dealt with money and banking reference was made to the importance of stability in the general level of prices. No one could reasonably desire, however, that the price of each commodity or service should always remain unchanged. As the perfection of new processes in the manufacture of automobiles, for example, takes place, it is socially desirable that the prices of automobiles should fall. In this way the automobile industry can be expanded as a result of increased sales and the benefits of the new processes can be more widely extended. Or, if the desire for a certain good should change, if people should come to be more anxious to have it, it is socially desirable that its price should rise in order that the productive forces might be directed into that line of work. In short, as emphasized in the earlier pages of this book, price variations constitute the guide to economic conduct. Indeed, a society of private property would be unworkable unless the prices of the various goods and services were free to move up or down as conditions of supply and demand are altered. Individual initiative based on the desire for economic gain could not direct the economic activity of the various individuals of an economic society except under the conditions of the free movement of the prices of individual articles.

It is, however, one thing to have the prices of a few goods go up or down; and quite another to have the prices of almost all goods rise or fall. It is uniformity from time to time in the prices of commodities and services considered as a whole that is desirable. Perhaps absolute uniformity from decade to decade and from century to century would not be in the social interest. Perhaps a slight increase in prices over long periods of time would be in the interest of social welfare. This point will be discussed in a later chapter. But clearly, marked changes in the prices of most commodities over short periods of time cannot be defended as desirable.

The Measure of Price Changes. — The problem of how to measure price changes is very interesting. A great deal of attention has been given to it, but only a brief description of the most elementary features of the process is possible in this book. A number that measures or indicates the price level at any one time is called an index number. Such a number indicates the price level at some one period of time in relation to some other period of time. Many index numbers, constructed to show current price levels, are based on the price level of 1913, the year preceding the outbreak of the World War. Until recently the year 1913 was used as a base for the index numbers of wholesale prices of the United States Bureau of Labor Statistics. In July, 1927, the index of wholesale prices was 144.6. This means that according to the reckoning of this Bureau the price level at that date was 44.6 per cent higher than the price level in 1913. The index number of wholesale prices now published by the Bureau is based upon the price level of 1926. The index of wholesale prices upon this new base was given as 96.3 in January, 1928, which indicates that prices at wholesale were 3.7 per cent lower in that month than in 1926. Prewar prices are becoming less and less significant as the basis of price comparisons and it is to be expected that nearly all price indexes will shortly be based upon post-war years. Before the war, the Bureau of Labor Statistics used the period 1890–1899 as the base period for its index numbers.

One of the first questions that confront one in constructing index numbers is that of the commodities to be included. Clearly, the prices of all commodities need not be used in making a comparison. Only the more important commodities need be considered. In comparing the price level for 1927 with that for 1913, the prices of borax, geraniums, and shoe polish need not be considered, but the prices of wheat, cotton, and iron could not properly be left out. One aspect of the question of the commodities to be included is that of the number that are to be used. The Bureau of Labor Statistics at the present time uses 404 commodities in computing its general price index.

It may be noted parenthetically that index numbers are constructed for a great variety of purposes. Not only are they used to show the relation of the general price level at one time with that which prevailed at another time, but also to show the relation of the cost of living at two different periods, or of the prices of building materials, the prices of bonds or stocks, the prices of commodities that are especially susceptible to changing business conditions, the volume of bank checks, etc. The purpose of the index number will obviously determine what commodities should be included in the computation.

In deriving an index number to indicate the relation between the prices of a group of commodities at two periods of time, the various prices that prevail for each commodity during the period of time that is taken as a base must be reduced to an average price. Thus, if the price of corn fluctuated during the base year from 75 cents to 90 cents per bushel, an average price must be established for that year. Likewise, an average price must be established for the second period that is considered. This involves a determination of which one of the many methods of finding an average should be used, the arithmetic, geometric, median, mode, or some other. After this average price for each commodity has been determined for each of the two periods that are to be compared, the prices of all of the commodities that are included must then be made into an average price. This is usually done by using relative price numbers. Thus, to use a very simple illustration, if the average retail prices of wheat, coal, and tea for the two years to be compared are found to have been as indicated in the first and third columns of the following table; the relative prices for the base year may be set down as 100 (column 2) and then the relative prices for the current year can be computed by comparing the actual prices for the two years. The results of such a computation in this case are indicated in the fourth column. If now, to use the method of the simple arithmetic average, we add together the three relative

Table 21

Commodity	*Base Year*		*Current Year*	
	Actual Price	*Relative Price*	*Actual Price*	*Relative Price*
Wheat	$0.90	100	$1.35	150.0
Coal	4.50	100	4.00	88.9
Tea	0.50	100	0.55	110.0

prices for the current year, and divide by three we will get 116.3 as an index number. This would indicate that these three commodities considered together were 16.3 per cent higher in price in the second year than in the first year. But in arriving at this number the same weight was given to the price of each of these commodities. Tea is, obviously, of less significance than either of the other two, if we are thinking of the general price level, or of the cost of living. Hence, it is advisable to assign weights to the prices of these commodities, or as it is usually stated, they should be *weighted.* One way of arriving at the weights to be used — of determining the importance of each commodity — is to determine (or estimate) the amount of money spent for each one during the course of a year. If it is found that twice as much money is spent for wheat as for coal, and twenty times as much for wheat as for tea, weights of 20, 10, and 1 may be assigned to each commodity respectively. The computation would then be concluded as follows, if the method of the simple arithmetic average is used.

$$\begin{array}{rcrcrl}
150 & \times & 20 & = & 3000 & \\
88.9 & \times & 10 & = & 889 & \\
110 & \times & 1 & = & 110 & \\
 & & \overline{31)} & & \overline{3999} & (129
\end{array}$$

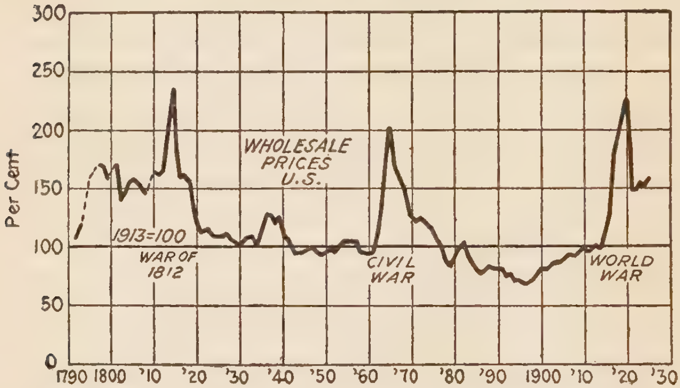
The index number would thus be found to be 129. The prices of the three commodities would thus be said to have increased 29 per cent, from the time of the base year to the current year. The significance of weighting may be further indicated by observing that the index number of the Bureau of Labor Statistics shows the level of prices to have fallen slightly during the past six years, while certain eminent statisticians argue that the level of prices has not fallen during this period. The difference comes from a difference in opinion as to the weight that should be assigned to agricultural products. The critics referred to contend that the Bureau overweights agricultural commodities.

In conclusion it may be emphasized that an index number must be taken to be merely an indicator. Any one index number is the result derived by selecting certain commodities, by using a certain method of establishing the actual price of each, by using certain weights, and by computing the final average in a certain way. However, index numbers are absolutely essential to economic analyses, and further, although the formulae for computing them are legion the results derived by the various methods are substantially similar.

Secular and Cyclical Price Trends. — Price movements may be considered for long or for short periods of time. When the long period of time is considered, the movement is spoken of as a secular price trend, while a short period may be called a cyclical trend, or if without regularity, simply a movement or change in prices. During part of a year or over a few years, the prices of a group of commodities may fall, but over a long period of time their prices may rise. Agricultural prices, for example, have fallen since the close of the World War. Previous to this, these prices had risen since 1897, and perhaps another upward movement may begin soon. If it does, the secular trend for the entire period may be said to be upward. That is, the period of falling prices from 1921 to 1926 may prove to be of no consequence in terms of the long time movement.

Price Movements in the United States, 1791–1925. — The chart below indicates the movement of wholesale prices in the United States from 1791 to 1925. The chart shows three periods of very high prices. These were periods of war. From 1820 to 1850, prices had a downward trend. Likewise, the trend was downward from 1870 to the middle 1890's. Prices turned upward in the middle of the nineties and continued to rise gradually until the beginning of the World War. Then they rose precipitately until 1920, and then fell even more sharply than they had risen. The price movements in England were very similar to those in the United States during this period, except that English prices were but slightly affected by our Civil War.

Wholesale Commodity Prices in the United States[1]
Adjusted to 1913 as Base of 100.



The Factors that Determine the Price Level. — It was indicated in an earlier chapter that the quantity of money available in a community and the quantity of goods that are for sale are the two major factors in the determination of the general level of prices. A more detailed statement of the case leads to the introduction of a third factor. The three factors may be indicated as follows: (1) the volume of buying power, (2) the desire to use the buying power, and (3) the quantity of goods and services to be sold.

The volume of buying power is made up of the stock of money and the amount of bank credit and other credit that may be extended to borrowers or purchasers. An increase in the volume of money such as results from the discovery and mining of gold, obviously, makes it possible for persons to bid higher for goods than would otherwise have been possible, and so tends to raise prices. Further, the ability of bankers to extend credit —

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[1] From index figures computed by the Federal Reserve Bank of New York. Taken from Snyder, "Business Cycles and Business Measurements," p. 58.

to make loans in the form of checking accounts or through the issuance of notes — is also a factor of importance. If for any reason the ability of the bankers in this respect is extended, more buying power is thereby made available, and this tends to result in more bidding for goods and thus in an increase in prices. In addition to bank credit, credit that will be given to individuals and by firms may also be of significance. If in a community that has been on a strictly cash basis the merchants should begin encouraging their customers to open charge accounts, the buying power of the consuming public would be increased and this would tend to cause prices to rise.

The installment buying, for example, that has become so widespread in the United States during the past decade has undoubtedly contributed toward making the price level higher than it otherwise would have been. This method of selling has permitted merchants to dispose of goods that they otherwise could not have sold. Their demands upon manufacturers have thus increased. Likewise, the demands of manufacturers upon the suppliers of raw material have also increased as a result of the installment plan of merchandising. The effect of this is somewhat short-lived, as merchants cannot continue indefinitely to extend credit to customers, but certainly for a period during which credit is thus being extended, the level of prices is affected thereby.

The second factor in the determination of price levels — the desire to use buying power — must not be neglected in an analysis of the forces affecting prices. If persons have lots of money and refuse to use it — if they hoard it — it cannot result in an increase in prices. It will, indeed, have no effect upon prices. Similarly, if the bankers of a community have been required to have a gold reserve of, say, 50 per cent and if the requirement is reduced to 25 per cent, assuming no change in the amount of gold available, the bankers could then loan twice as much money as they were able to loan before this change was made. Or if there were no change in the gold reserve requirement, and if bankers should come into possession of more gold, they would be able to extend the volume of loans to their customers. Such an increase in banking power would not, however, have any influence upon the level of prices if business men and others did not wish to borrow more money than they had been accustomed to borrow before these changes took place. In such a situation, bankers might encourage their customers to extend loans by offering to lend money to them at a reduced rate of interest. But even so, borrowing might not be increased, and thus prices might not be affected as a result of the increased buying power which had been made available. The importance of this factor will be noted again presently. Those economists have certainly erred who have based their analyses upon the assumption that any increase in buying power will at once be used by the buying public in the purchase of commodities and services.

The third factor listed above, namely, the quantity of goods and services to be sold, is, obviously, of marked significance. If we assume a given volume of buying power and a desire to use it, the prices that will result from spending it will depend upon the quantity of goods and services that are purchased. To spend one million dollars for one million units will result in the payment of an average price of $1 per unit. But, of course, if the same amount is spent for two million units, the average price will be only one-half dollar per unit.

The price changes which have been noted in the chart above afford striking illustration of the operation of these three factors. Consider a period of war: the demands of the government increases for munitions and other materials of war, including food and clothing. This tends to increase the prices of these commodities. If the government issues paper money with which to make its purchases, the demand for goods is further augmented and prices rise still more. The demand of the government encourages certain business men to produce goods and sell to it, and others are encouraged to produce goods to sell to the business men and their employees who are producing for the government. The desire to produce goods is thus greatly quickened. Demands are made on the banks for funds, and if they can and do extend their loans, more buying power is thereby added;

bidding is brisk and prices rise. Prices may rise high but the quantity of goods produced and the number of persons employed may be so augmented that prices will not rise as high as they would have risen if the quantity of goods and services to be sold had not increased.

The above analysis indicates the reason for the marked rise in prices in this country during the late war. The demand of the English and European governments became an important factor in our markets as early as 1915. Business men saw big profits ahead and were anxious to extend production — to build more plants, to hire more laborers, to buy more materials. The Federal Reserve Banking System had gone into operation in the autumn of 1914. The banking reserves of the country were more centralized than before. An extension of bank credit was thus possible and hence the desire of business men for more buying power could be met. As the war progressed, and as we became involved in it, these factors were augmented. Our government began buying goods and services on an unprecedented scale. Large quantities of gold had come into the country in payment for goods that had been exported. This gold went into the reserves of the Federal Reserve banks and permitted them to further extend the buying power of the community. Further, the gold reserve requirements for the Federal Reserve banks were lowered by act of Congress twice during the war. The possibility of the expansion of bank credit was thus greatly augmented and business men were all clamoring for their share of it. The volume of buying was unprecedented and by 1918 prices had risen to almost twice the level for 1913. The output of goods was tremendous. It was perhaps larger than in any previous period despite the number of men in military service. This operated to keep prices from rising as high as they otherwise would have risen.

Following the close of the war, in 1918, there was some fear of a price collapse. Government buying, however, continued to a large extent and the spending of the civilian population was somewhat quickened with the coming of peace. Prices continued to advance. Business men again saw large profits in the offing and borrowed in order to further extend their lines of enterprise. They bid frantically against each other for goods and prices rose at a rapid rate. Finally the limits of credit extension were reached. The banking power of the Federal Reserve System could not be stretched further. Then, too, sale of merchandise at retail fell off. Business activity decreased. Price cutting began in order to stimulate sales, and then prices fell precipitately. From a level of 247 in June 1920, as compared with 1913 at 100, prices fell to 147 as an average for 1921. In a year's time the price level was cut almost in two. It is to be noted that there was as much money in the United States, as much in bank reserves, in the latter part of 1920 as in 1919, but business men did not desire to use it. Hence, prices fell.

The following table gives statistical verification of the above description.

Table 22

INFLATION IN THE UNITED STATES,[1] 1913–1920

Year	*Price Index Bureau of Labor Statistics*	*Money in Circulation*		*Bank Deposits*		*Physical Volume of Business (Index No.)*
		Amount in Millions	*Index Number*	*Amount in Millions*	*Index Number*	
1913	100	$3,390	100	$12,678	100	100
1914	98	3,505	103	13,430	106	99
1915	101	3,692	109	14,411	114	104
1916	127	4,159	123	17,840	141	109
1917	177	4,914	145	21,273	168	112
1918	194	5,579	165	23,771	188	113
1919	206	5,793	171	30,300	220	106
1920	226	6,060	178	27,928	239	111

[1] See E. W. Kemmerer, *High Prices and Deflation*, pp. 7, 12, 27, and George R. Davies, *Introduction to Economic Statistics*, pp. 88, 90, 99. Taken from L. D. Edie, *Economics: Principles and Problems*, 1926, p. 545.

The increase in the volume of money in circulation as shown by the table, amounted to 78 per cent during the period 1913–1920. This came largely from the issuance of Federal Reserve notes. Bank deposits in 1920 stood at 239 as compared with 100 in 1913. Clearly, the volume of buying power available in 1920 was very great as compared with the amount available in 1913, and for almost the whole of this period there was a great desire to use this buying power. But following the middle of 1920, business men were far less anxious than formerly to use the money that was available to them, and hence prices dropped.

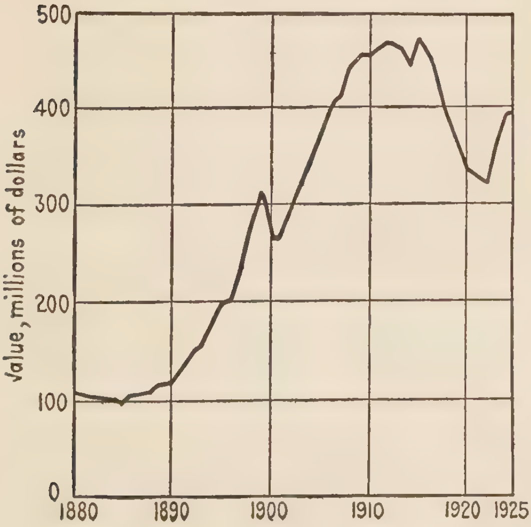
The period from 1870 to the middle nineties was discussed in a preceding chapter. It was emphasized there that the increase in the quantity of goods during this time together with a lack of sufficient increase in the volume of gold money led to the price decline during these two and a half decades.

Gold Inflation. — The 1897–1913 period deserves attention. This was a time of marked rise in the level of prices. On the basis of 1913 prices as 100, the price level in 1897 as computed by the Bureau of Labor Statistics, stood at 67; in 1900, 81; 1903, 86; 1906, 89; 1909, 97; and, of course, 1913, 100. Prices thus increased by one-half during these sixteen years. This sharp rise in prices is to be attributed to the great increase in the quantity

WORLD GOLD PRODUCTION

1880–1925

Source: Standard Statistics Co.



of gold during this time. Over twice as much gold was produced, in all countries, per year during the five-year period 1896–1900, as during any preceding five-year period following 1860, and almost three times as much as during 1881–1885. Further, the average yearly output from 1896 to 1900 was almost twice as large as the average yearly output during the fifties, which had thus far outstripped all previous records. But marked as was the production of gold from 1896 to 1900, the yearly output from 1901 to 1905 was almost one-third larger than that for the preceding five years. And similarly, the output during the period 1906–1910 exceeded that of 1901–1905 by one-third. The average output for 1911–1915 was over 22 million fine ounces, but no more than 6½ million ounces per year were produced in any five-year period preceding 1891–1895. The chart on the preceding page shows these data in graphic form.

The Equation of Exchange. — The astronomer, Simon Newcomb, some forty years ago devised the formula $MV = PT$ to express the relation of money and prices. It has been used recently by many economists and especially by Professor Irving Fisher. He uses it in the expanded form $MV + M'V' = PT$. In this formula, M represents the amount of money, principally gold, that is used in the community; V represents the average number of times that a dollar is used during a given period of time, as one year; M' indicates the volume of bank credit (checking accounts) and non-bank credit; and V' represents the average number of times that a dollar of credit is used during the period of time under consideration. T stands for the volume of goods and services that are exchanged and P is the average price per unit of these goods and services.

There can be no question as to the general validity of the equation of exchange as a statement of fact. The left side of the equation indicates the volume of money expended and the right side the amount of money received. Clearly, the amount of money spent by buyers equals the amount that is received by sellers over a long period of time. During short periods of time, however, these sums may not be equal, as goods may be bought on credit, or money may be used to pay for goods that have been purchased earlier. But broadly speaking, the equation of exchange is valid, as a statement of a market fact.

Fisher holds that a change in M tends to leave V and T unchanged and thus results in a change in P that corresponds to the change that has been made in M. Fisher, of course, recognizes the importance of the other factors in determining the price level, but his position is, as indicated, that a change in M tends to bring about a corresponding change in the level of prices (P).

The equation of exchange interpreted in this way as the causal explanation of the price level is commonly known as an expression of the "quantity theory of money." The quantity theory expressed in this way has many critics. No one questions the proposition that a long time increase in the quantity of money, as in gold during the period 1897–1913, will tend to increase prices. The objection is to the quantity theory in its rigid formulation as given, for example, by Fisher; namely, that changes in the quantity of money cause corresponding changes in the level of prices. This makes of minor importance the factor listed second in the analysis above; namely, the desire of business men to use the buying power that is available. In Fisher's analysis it is implied that business men are always desirous of using the buying power that is available to them. This is clearly not true. The prospect of profits cannot be omitted. Further, an increase in prices may cause an increase in bank deposits (M'). Thus during the war, the increase in prices made it necessary for merchants and other business men to increase their borrowing at the bank in order to continue to do the same volume of business as before. Hence, the conclusion is that the causal factors in pricing do not always run from M to P in terms of the equation of exchange. The significant factors, to repeat, are the volume of buying power, the strength of the desire to use it, and the quantity of goods and services that are exchanged.

II. THE CONTROL OF PRICES

The Compensated Dollar. — Professor Fisher, to whom reference has been made, is a zealous advocate of a method which he claims will make it possible to maintain a stable price level. This is known as his proposal for a compensated dollar. The plan contemplates that gold shall be held by the government uncoined and that gold certificates shall be issued to be used as bank reserves and in hand-to-hand exchange. At the beginning, a certificate for $10 would be issued for 232.2 grains of pure gold, the present standard. An index number would then be carefully constructed and kept up to date each month. If the index showed that prices were rising, this would be taken to mean that there was too much money and a gold certificate for $10 would then be issued only in exchange for more than 232.2 grains of pure gold. Thus the gold that was mined and offered for sale to the national government would not increase the volume of money as much as it would have done if the index number had not indicated that prices were rising. Or, if the index number indicated a falling price level, this would be taken to mean that there were not enough gold certificates and thus gold certificates would be paid out by the government for less than 23.22 grains of pure gold per dollar. The quantity of money (gold certificates) would thus be in excess of what it would otherwise have been. Also, of course, the government would redeem the certificates by paying out the same quantity of gold bullion that it would require for the issuance of gold certificates of given denomination.

There is undoubtedly some validity in this proposal. This control of the volume of gold money (certificates) in hand-to-hand exchange and available for bank reserves would tend to affect the price level. The scheme could not, however, be expected to result in the maintenance of prices at a given level. The above analysis of the importance of the desire to use money suggests that business conditions will tend to cause price fluctuations regardless of the volume of money that is available. The matter of prospective profits to business men as a factor in determining their bidding and thus in determining prices is too important to be ignored.

Bank Credit Control. — Another proposal for the control of the level of prices centers in the banking institutions. It is claimed that the Federal Reserve banks, for example, (1) by their control over the rate at which commercial paper is rediscounted for member banks, and (2) by their ability to sell or buy commercial paper on the open market, can control the level of prices. If prices were rising, the argument is, as noted in the preceding chapter, that the Federal Reserve banks can raise the rate of discount and thus reduce the profit that member banks can make by borrowing from the Federal Reserve banks and reloaning to their customers, and thus that the lending of member banks would be curtailed. This would mean a reduction in the borrowing of business men, thus their buying in the markets would be curtailed and prices would be reduced. Also, at such a time, the reserve banks could sell large quantities of the paper which they own, including government bonds, and thus by taking money off the market, reduce the buying power of the public, and thus reduce prices.

In a period of falling prices, the opposite of these two courses could be taken. The Federal Reserve banks could lower the rate of discount and buy commercial paper on the open market. The effect of both operations would tend to increase the buying power of the public and thus operate to increase the level of prices.

Professor Commons argues that this policy has been followed by the reserve banks for the past six years and that it is due to this policy that the price level has remained practically unchanged during this time. Other observers insist, however, that the lack of change in the price level has not been due to the policy of the Federal Reserve banks. They point out that the occurrence of two phenomena together does not establish the fact that they are causally related — both might be due to a third phenomenon. General business conditions are said by these observers to be responsible for the price level and also for the operations of the reserve banks.[1]

But unquestionably the Federal Reserve banks affect the price situation by the use of the two devices just discussed, although they may not be able to control it sufficiently to maintain a stable price level over a long period of time. Indeed, these banks are evidently influencing the price level to-day. They could, it seems, pursue a policy that would lead to a high degree of inflation, that is, to rapidly rising prices. The Federal Reserve banks hold large quantities of gold, amounting to about one-half of the world's stock of money gold. The actual reserve percentage of gold to Federal Reserve notes and balances of member banks is over 70 per cent and has stood at this figure for three or four years. The law requires less than 40 per cent in gold reserves against these two items of bank credit. Thus, the Federal Reserve banks could loan to member banks in the form of deposit accounts and notes, and sell to the public, almost twice the amount of Federal Reserve banking power that is now being used. This could be accomplished by lowering the discount rate and by buying commercial paper on the open market with Federal Reserve notes. If this policy were undertaken, banks all over the country would find the money market "easier." They could build up large balances with their respective Federal Reserve banks and they could lower the rate of interest to their customers and be more liberal in the granting of loans. Business men would thus be encouraged to expand their undertakings. Assuming their willingness to go ahead, they would begin to bid against each other for labor and materials. Prices would then begin to rise. Business men would then be able to produce and sell, or buy and sell, on a rising market. Profits would thus be large, and further extensions of credit would be desired by various business firms. This would then lead to more borrowing at the banks and to more active bidding by business men against each other for labor and materials. Thus prices would mount upward. This might go on until finally bank credit could not be further extended. The reserve banks would then be forced to raise the rate of discount and to restrict loans. Prices might then collapse.

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[1] See articles by Commons, Gregory, and Bellerly in *The American Economic Review*, March, 1925, by Commons in *The Annalist*, April 1, 1927, and by Wissler and Comer in *The Annalist*, May 13, 1927.

Even if the inflation were not carried nearly so far as has been suggested in the above analysis, there is clearly a possibility in the present situation for the Federal Reserve banks to be more liberal in their credit extension and thus to follow a policy that would lead to rising prices. There seems to be no question that the Federal Reserve Board and the various Federal Reserve banks are consciously following a policy to prevent such an occurrence. Our vast amount of gold is really impounded. It is not working to its capacity as reserve. It is not being let out to do what it could on the price level. That this is true is a subject for rejoicing. It indicates that a new stage is being reached "in that long and gradual process by which men are learning to keep money, the good servant, from becoming a bad master."[1]

One factor of importance in the control by the Federal Reserve System is the effect upon the attitude of bankers and business men of a change in the rate of rediscount. If a rate of rediscount is raised, for example, this may be taken to mean that business firms have overextended their loans — that they are overextending their business operations. The result may be that bankers will become more conservative in extending loans and business men generally will become more cautious. Thus the bidding for labor and materials will become less insistent than before and this will cause the price level to fall or at least prevent it from rising. That is, the raising of the discount rate in such a case may affect the situation not so much by increasing the cost of borrowing as by causing men to be less anxious to borrow than they were formerly.

It is claimed by many observers that the period of sharp inflation after the war during which prices rose from an average of 194 during 1918 to an average of 247 in May, 1920, an increase of 50 per cent in a year and a half, could have been prevented if the Federal Reserve banks had increased their rates of rediscount. This was not done. Balances of member banks increased from an average of 23.7 billions in 1918 to 30.3 billions in 1920. A rise in the rates of rediscount would not only have cut down the profits from borrowing by member banks, and thus have reduced their ability to loan to business men, but also have served as a warning that business extension was running at too fast a pace. Thus the rising price level would have been checked

[1] W. C. Mitchell, *Business Cycles*, 1927, p. 136.

and the depression of 1921 would have been much less severe. The rate was not raised, it is said, because of the insistence of the Secretary of the Treasury, McAdoo, a member *ex-officio* of the Federal Reserve Board, that the rate be kept down so that the government could borrow a large sum of money which it needed at a low rate of interest. The Victory bonds were sold at par at a low rate of interest, as the Secretary of the Treasury desired, but if the above argument is sound, the country suffered the cost of undue inflation and consequent depression as a result. The economic loss to the nation as a consequence of this inflation certainly exceeded by far the amount saved by the government as interest as a result of the policy of the Federal Reserve Board. This experience, by the way, led many competent men to suggest that government officials should not have membership on the Federal Reserve Board.

Price Control by Use of Paper Money. — Another proposal for price control is that gold should be abolished as money and that irredeemable paper money should be substituted for it. This plan is advocated by a brilliant English economist, J. M. Keynes. The scheme involves, of course, the idea of strict control by government officials, or by a permanent commission or board created for this purpose. If such money could be rigorously controlled, the plan would no doubt be feasible. The difficulty, however, with this kind of money, as noted very frequently in the preceding chapters, is that each issue tends to foster another issue until the quantity comes to exceed all proper bounds. Perhaps we may develop sufficient monetary wisdom eventually to make such a scheme practicable. The price level, even then, however, could perhaps not be held perfectly stable, for reasons which have been advanced in criticizing the idea of the compensated dollar; but major fluctuations in the level of prices might be prevented.

III. The Return to a Gold Standard from the Paper Standard

The problem of the return to a gold standard after paper money has become the actual standard warrants discussion in a chapter dealing with the subject of money and prices. The English people, for example, returned to their gold standard of 113 grains of gold per pound in May, 1925. Prices for several years had been paper money prices and were considerably above gold prices. It was argued in opposition to the proposal that this return to the gold standard would force prices down and make it necessary to reduce wages, and, as a result, greatly disturb the industrial life of the country. It was further insisted that foreign dealers could not so readily buy English goods after the change as before, because they would have to pay in gold pounds rather than in paper pounds. An English pound was worth about $4.20 in New York in 1921. An English gold pound can never be bought for less than $4.83 in New York. Thus to restore the gold standard it was said, would curtail English selling because it would increase the price that foreigners must pay for English money with which to buy English goods. Hence, English exporters would be forced to lower their prices and to cut wages. This, it was contended, would lead to a feeling of great bitterness on the part of the laboring population and would foster industrial strikes of great magnitude.

The policy, however, was carried through as indicated. Certain observers have attributed the continued depression in English export business and the insistence of coal mine owners on lowering wages to this money policy, and hence the prolonged strike of the British miners from May to November, 1926, is said by these critics to have been due to the restoration of the old gold standard. Other observers have denied a causal relationship among these phenomena. It seems reasonable, however, to believe that the policy did affect adversely the export business of the English people and caused the reduction of prices and wages which took place. It is also clear that it was to the advantage of all creditors. Creditors were then paid in gold pounds of 113 grains rather than in paper pounds worth, say, 100 grains of gold. Another phrasing of this is that prices fell and creditors gained as a result of the price adjustment.

The English people could have returned to *a* gold standard by redeeming paper money in, for example, 100 grains of gold.

This would not have been the old gold standard. Many persons claim that British credit would have suffered as a result of such a policy. This is possible, but it is hardly probable that the English government and English business firms would not have continued to have good credit in the world's markets. It is not generally expected that another holocaust, such as the World War, will occur again soon.

In France, as noted in the preceding chapter, the paper money is now being redeemed in gold exchange at approximately 4 cents in American money per franc. France has thus practically restored the gold standard, but not her old gold standard of 19.3 cents in gold. To restore the former standard would be a great boon to creditors, but it would be a calamity to the general economic life of the country. Prices would have to be forced down to something like one-fifth of the present level and wages, too, would have to be similarly reduced. Manufacturers would be called upon to produce for a falling market, merchants to buy for resale at lower prices, and wage earners to give up their accustomed money wages. This would be fatal to orderly economic life.

PROBLEMS AND EXERCISES

363. On the basis of the following data, construct an index number for year *Y*, with year *X* used as the base, with weights as indicated:

	Year X	*Year Y*	*Weight*
Com. (1)	$6.00	$4.80	2
" (2)	.08	.10	4
" (3)	1.10	1.65	1

364. Explain the price trend in the United States during the Civil War in terms of the three factors mentioned in the text.

365. Argue that the "ten-pay plan" of selling clothing, which has been practiced extensively in many stores during the past few years, has tended to affect the price level.

366. "After a considerable period of installment buying, the continuation of such a method will have no effect on the price level." Discuss.

367. (*a*) Under what conditions would the factor listed as number 2, in the text, affect the price level in a way that strikingly illustrates the importance of this factor?

(*b*) Answer the same question for each of the other two factors.

368. (*a*) If a group of persons in an isolated community receives $200 each every thirty days and spends it all on an average during fifteen days, what is the velocity (V) of money per year in the community?

(*b*) If these persons should be paid $100 at the end of each two weeks and should spend this money on an average by the end of one week, what would be the velocity of money per year?

(*c*) Would a change from conditions noted in (*a*) to those indicated in (*b*) have any effect upon the price level? Explain.

369. What data would be needed from the banks of Columbus in order to compute the yearly velocity of bank deposits of this city?

370. Can you suggest a reason for the term "compensated dollar"?

371. Note the quotation from Mitchell. Cite a case in which money has proved to be a "bad master."

372. What groups would gain from a rise in the price level? Would any groups suffer?

373. State, in general terms, the cost of a business depression.

374. (*a*) If the French government should continue to redeem francs at the present rate, 4 cents, rather than return to the old gold rate, would this amount to a partial repudiation?

(*b*) What groups would gain if the old standard should be restored? What groups would lose thereby?

References

All of the books listed in the appendix discuss some, at least, of the topics pertaining to money and banking that are treated in the preceding chapters. Among the books dealing with the general subject of money and banking are: H. White, *Money and Banking*, 5th ed., 1911; H. G. Moulton, *The Financial Organization of Society*, 1923; and R. D. Kilbourne, *Principles of Money and Banking*, 1927. Significant treatment of monetary theory may be found in I. Fisher, *The Purchasing Power of Money*, 1911; J. L. Laughlin, *Principles of Money*, 1903; B. M. Anderson, Jr., *The Value of Money*, 1917; and J. M. Keynes, *Monetary Reform*, 1924.

D. R. Dewey, *The Financial History of the United States*, 8th ed., 1922, and C. J. Bullock, *The Monetary History of the United States*, 1910, both of which are referred to in the footnotes above, give excellent accounts of our monetary history. C. J. Dunbar, *Theory and History of Banking*, 1922, is also significant. The operation of the Federal Reserve Banking System is well treated by E. A. Goldenweiser, *The Federal Reserve System in Operation*, 1925. See also, E. W. Kemmerer, *The A. B. C. of the Federal Reserve System*, 1926.

APPENDIX

REFERENCES

A. Books.

The following text-books for college use deal with practically all of the subjects discussed in this book.

Boucke, O. F., *Principles of Economics*, 1925 (2 vol.).
Edie, L. D., *Economics: Principles and Problems*, 1926.
Ely, R. T., *Outlines of Economics*, 4th ed., 1923.
Fairchild, F. R., Furniss, E. S., and Buck, N. S., *Elementary Economics*, 1926 (2 vol.).
Fetter, F. A., *Principles of Economics*, 1915 and *Economics Problems*, 1916.
Rueffner, L. A., *Principles of Economics*, 1927.
Seager, H. R., *Principles of Economics*, 3rd ed., 1923.
Seligman, E. R. A., *Principles of Economics*, 11th ed., 1926.
Taussig, F. W., *Principles of Economics*, 3rd ed., 1921 (2 vol.).

The following texts cover a less extensive list of topics:

Brown, H. G., *Economic Science and the Common Welfare*, 1925.
Bullock, C. J., *Introduction to the Study of Economics*, 1913.
Bye, R. T., *Principles of Economics*, 1924.
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Davenport, H. J., *Economics of Enterprise*, 1913.
Fisher, I., *Elementary Principles of Economics*, 1912.
Hadley, A. T., *Economics*, 1901.
Johnson, A. S., *Introduction to Economics*, 1922.
Patterson, S. H., and Scholz, K. W. H., *Economic Problems of Modern Life*, 1927.
Shearman, H. P., *Practical Economics*, 1922.
Taylor, F. M., *Principles of Economics*, 1921.

Readings in general economics:

Hamilton, W. H., *Current Economic Problems*, 1919.

Marshall, L. C., Wright, C. W., and Field, J. A., (Editors), *Materials for the Study of Elementary Economics*, 1912.

Weld, W. E., and Tostlebe, A. S., (Editors), *A Case Book for Economics*, 1927.

Books on general economics by foreign writers: *Principles of Economics*, 1st ed., 1890, 6th ed., 1910, by Alfred Marshall, an English writer, is one of the most outstanding books in economics. A. C. Pigou, the successor of Marshall at Cambridge University, has published two noteworthy books: *Wealth and Welfare*, 1912 and *The Economics of Welfare*, 1925. E. Cannan's little book *Wealth* is an excellent brief treatise. *Principles of Economics* by C. Gide, a French economist, is available in English, and also *Principles of Economics* by N. G. Pierson, a Dutch economist. *The Theory of Social Economy*, 1923, by G. Cassel, a Swedish economist, has been translated into English, and has received much attention in the United States.

B. Periodicals.

There are three journals in the United States dealing with the general field of economics: *The American Economic Review*, published by the American Economics Association, *The Quarterly Journal of Economics*, published at Harvard University, and the *Journal of Political Economy*, at the University of Chicago. The first two are issued quarterly and the third monthly for the months of the school year. *The Annals of the American Academy of Political and Social Science*, *The Political Science Quarterly*, and *The American Political Science Review* frequently contain articles on economic subjects. *The Economic Journal*, which is published in London, deals as the name implies, with the general field of economics.

The standard monthly magazines, such as the *Atlantic Monthly*, *Harpers*, *Scribners*, *Century*, and the *Forum*, very frequently contain articles on economic subjects. *The New Republic* and the *Nation*, two weekly journals, treat of the current phases of the economic scene.

C. Special Treatises and Bulletins.

The various departments of the United States Government and of the state governments issue reports and special bulletins from time to time that contain valuable material on various economic subjects. The current list of bulletins of the United States Government that are available are listed in a catalogue issued by the Superintendent of Documents, Washington, D. C.

Several banks publish monthly bulletins that are supplied gratis. Among these are the National City Bank and the National Bank of Commerce, both of New York City. The Federal Reserve Banks issue bulletins dealing especially with current economic conditions in their respective districts. The Chase National Bank of New York City publishes special pamphlets dealing with economic problems. Many of the leading business firms and trade associations issue special bulletins dealing with their speciality.

D. THE TEACHING OF ECONOMICS.

A number of discussions of the teaching of economics are reported in the *Journal of Political Economy*, 1909–1914, vol. XVII–XXII. Two comprehensive reports on Social Studies in the Secondary Schools appear in vol. XXX, 1922, of the above named journal. The following articles deal with this subject: C. E. Persons, "Teaching the General Course in Economics," *Quarterly Journal of Economics*, vol. XXXI; John Ise and others, "The Course in Elementary Economics," *American Economic Review*, 1922, vol. XII and 1923, XIII; A. B. Wolfe, "Teaching of Economics Again," *Quarterly Journal of Economics*, 1920, vol. XXVIII and R. Peterson, "Study in the Teaching of the Principles of Economics," *Journal of Political Economy*, 1926, vol. XXXIV.

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